

*United States Department of Interior
Bureau of Land Management
Medford District
Ashland Resource Area*

*Environmental Assessment for
Grazing Lease Renewals
For
Antelope Road, Brownsboro, Canal
and Yankee Reservoir Allotments*

EA Number: OR-116-07-07

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1. Purpose and Need

Chapter 1 introduces a proposal to reissue grazing leases for four livestock allotments within the Ashland Resource Area of the Medford District Bureau of Land Management (BLM). It begins with an introduction to the analysis, background information about the project, followed by an explanation of the need for action, and a statement of the proposed action developed.

This chapter describes the environmental setting, cites management direction, and displays the decisions to be made in analyzing this project. It defines the scope of the analysis, summarizes the scoping process, and describes the issues identified during scoping.

1.1 Introduction

In 1934 the Taylor Grazing Act (TGA) established a strategy for grazing management intended to “stop injury to the public grazing lands by preventing overgrazing and soil deterioration....” Subsequent to the TGA, 65 million acres of public land deemed “chiefly valuable for grazing and raising forage crops” were placed in grazing districts. Grazing districts in Oregon were created exclusively on the east side of the Cascades and did not include lands that are now within the Medford District of the BLM. Section 15 of the TGA allows the issuance of grazing leases on public lands outside the original grazing district boundaries. Grazing leases in the Ashland Resource Area were issued under Section 15 of the TGA.

In 1976 Congress enacted FLPMA, making changes to the management of public lands overall, including grazing management. FLPMA did not distinguish between the administration of lands included in the original grazing districts and those leased under Section 15. Grazing regulations (Grazing Administration, exclusive of Alaska) are found in Volume 43 of the Code of Federal Regulations (CFR), Part 4100.

In addition to complying with the TGA and FLPMA, the BLM must comply with several other laws that affect the range management program. These include the Public Rangelands Improvement Act of 1978, the Endangered Species Act of 1973, the National Environmental Policy Act of 1969, and the Clean Water Act of 1972.

The BLM’s grazing regulations were revised in August 1995 and July 2006. However, an Idaho District Court Order dated June 8, 2007 enjoined the new grazing regulations that were promulgated on July 12, 2006. The BLM has been directed to use the grazing regulations that were in place on July 11, 2006, pending the outcome of court action. In accordance with the instruction, Subpart 43 CFR 4180 (added in 1995) directed each BLM State Director to develop “Standards and Guidelines for Grazing Administration.” Standards address the health, productivity, and sustainability of the BLM administered-public rangelands and represent the minimum acceptable conditions for the public rangelands. The guidelines are management practices that will either maintain existing

desirable conditions or move rangelands toward statewide standards within reasonable timeframes. "Standards for Rangeland Health and Guidelines for Grazing Management for Public Lands in Oregon and Washington" were issued on August 12, 1997.

Rangeland Health Assessments were completed for Antelope Road, Brownsboro, Canal, and Yankee Reservoir allotments in summer 2003. Determinations on the results of these assessments were initially made in September 2003 and reevaluated in 2004 after changes in staffing.

The grazing program is implemented through provisions in the Medford Grazing Management Program Environmental Impact Statement (EIS) (April 1984) and the Rangeland Program Summary (RPS) Record of Decision (September 1984). Since 1984, additional RPS updates have been published (October 1987, October 1990, October 2001). These updates were progress reports showing what had occurred since the decision document published in September 1984. Annual updates are reported in the Medford District Annual Program Summary.

The Medford District Proposed Resource Management Plan EIS (October 1994) and the Record of Decision (ROD) and Resource Management Plan (RMP) (June 1995) are tiered to the 1984 Medford Grazing Management Program EIS and the Rangeland Program Summary ROD. The Record of Decision for Amendments to Forest Service and Bureau of Land Management Planning Documents within the Range of the Northern Spotted Owl (Northwest Forest Plan) was signed April 13, 1994. This document was incorporated into the Medford District RMP (1995).

The Medford RMP, Northwest Forest Plan, Medford Grazing Management Program EIS and ROD, the Rangeland Program Summary ROD, and the Medford District Integrated Weed Management Plan (IWMP) and Environmental Assessment (EA) OR-110-98-14, tiered to the Northwest Area Noxious Weed Control Program EIS (December 1985) and Supplement (March 1987), and the Western Oregon Management of Competing Vegetation EIS (USDI 1989) and Final Rod (USDI 1992) are all programmatic documents. District/Region-wide Management Actions/Direction, Monitoring, and Environmental Consequences are discussed in those documents.

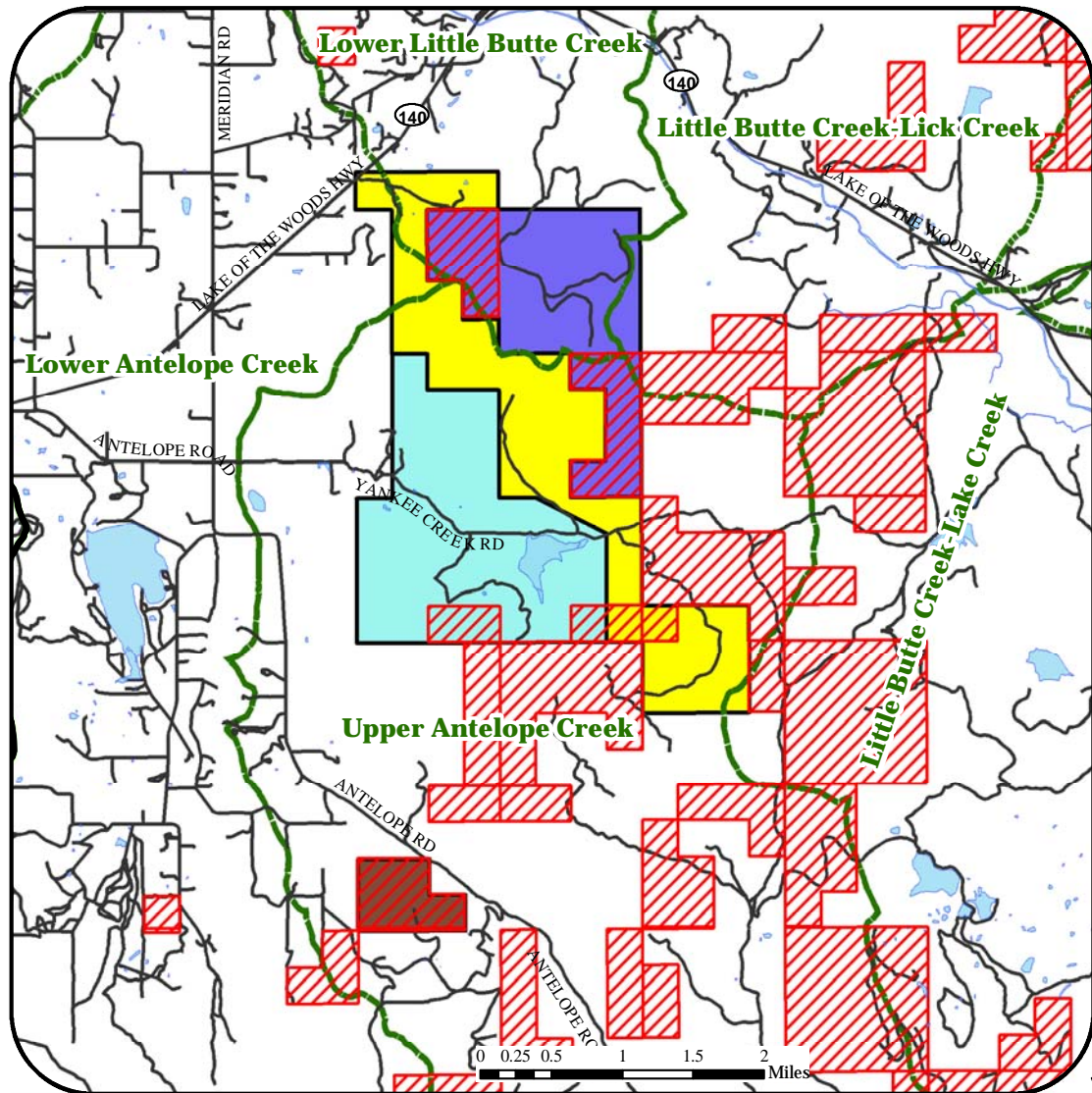
The Little Butte Creek Watershed Analysis (USDI BLM 1997) characterized the aquatic, riparian, terrestrial, and human features of the entire Little Butte Creek watershed. It presented desired future conditions and recommendations for the Little Butte Creek watershed. The grazing allotments lie within the Little Butte Creek watershed and will follow the recommendations presented in the Little Butte Creek Watershed Analysis.

This document will be concerned solely with the site-specific issues related to the proposal. The purposes of conducting an environmental analysis and then documenting the findings in an environmental assessment (EA) are to provide sufficient evidence to determine whether to prepare an environmental impact statement, provide the deciding officer with sufficient information on which to base decisions, and estimate the effects of implementing the proposed action and alternatives.

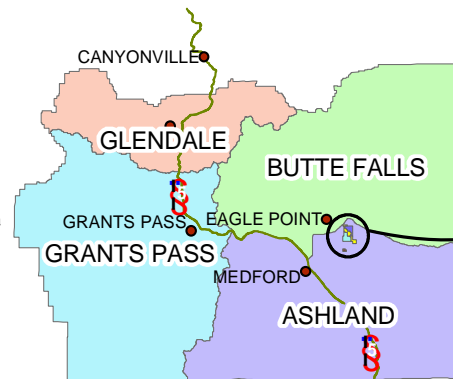
1.2 Environmental Setting

The BLM portions of these allotments are located south of State Highway 140 in T. 36 S., R. 1 E., Sections 17, 21, 27, 28, and 29; and T. 37 S., R. 1 E., Section 5, W.M. The grazing leases are within the Upper Antelope Creek, Little Butte Creek-Lick Creek, Lower Little Butte Creek, and Lower Antelope Creek level 6 subwatersheds within the Little Butte Creek level 5 watershed (Figure 1).

Figure 1. Grazing allotments: Antelope Road, Brownsboro, Canal, and Yankee Reservoir.



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Medford BLM Resource Areas

1.3 Background

Livestock grazing is a component of the Medford District's multiple-use program. It contributes to the social and economic well-being of the lessees, who rely on public land grazing.

The Medford District Office of the BLM is considering reissuing grazing leases for four livestock allotments within the Ashland Resource Area. They include Antelope Road, Brownsboro, Canal, and Yankee Reservoir allotments. With the exception of Antelope Road, the current leases expired in 2006 but were renewed with the same terms and conditions. Under existing law (Public Law 108-108, Section 325), grazing leases that expire, are transferred or waived during fiscal years 2004-2008 prior to the completion of the lease renewal process would be renewed. The existing terms and conditions of the expiring leases continue in effect until the lease renewal process can be completed in compliance with all applicable laws and regulations. During the lease renewal process, the leases may be canceled, suspended, or modified, in whole or in part, to meet the requirements of such applicable laws and regulations. Antelope Road expires in 2008.

The BLM generally issues grazing leases for a term not-to-exceed 10 years. However, should information collected subsequent to lease renewals indicate changes in management are needed to ensure that any of these allotments are meeting or making significant progress toward standards and conforming to guidelines (43 CFR 4180.2, *Standards for Rangeland Health and Guidelines for Grazing Management for Public Lands in Oregon and Washington* (1997)), a lease may be modified before its term expires.

There are several issues and resource conditions that have changed since the 1984 Range Management Program EIS and Rangeland Program Summary. Recent resource developments that potentially affect the manner in which livestock grazing is implemented include:

- The Southern Oregon/Northern California (SONC) coho salmon (*Oncorhynchus kisutch* spp.) have been listed as Threatened under the Endangered Species Act. There is habitat for this species within these allotments.
- Large-flowered woolly meadow-foam (*Limnanthes floccosa* var. *grandiflora*) and Cook's desert parsley (*Lomatium cookii*) have been listed as Endangered under the Endangered Species Act. These allotments are within the range of these plant species.
- There are "303(d)" streams adjacent and downstream of the allotments. The Oregon Department of Environmental Quality defines this category of streams as water quality limited waterbodies under the Clean Water Act.

- The 1996 amendments to the Safe Drinking Water Act (SDWA) mandated that state agencies conduct source water assessments for every public water system. The allotments fall within the source water areas for the Medford Water Commission and the cities of Gold Hill, Rogue River, and Grants Pass. The surface water source for these four public water systems is the Rogue River. Little Butte Creek is a tributary to the Rogue River.
- Implementation of the Record of Decision for Amendments to Forest Service and Bureau of Land Management Planning Documents within the Range of the Northern Spotted Owl (Northwest Forest Plan) (1994), incorporated into the Medford RMP, recognized that modification of existing grazing practices would occur, particularly in Riparian Reserves. “Adjust grazing practices to eliminate impacts that retard or prevent attainment of Aquatic Conservation Strategy objectives. If adjusting practices is not effective, eliminate grazing” (NFP, p. C-33). “Through a planning and environmental analysis process appropriate to the action, adjust or eliminate grazing practices that prevent attainment of Aquatic Conservation Strategy and riparian reserve objectives” (RMP, p. 92).

1.4 *Need for Action*

This section explains the underlying need to which the agency is responding in preparing this EA.

The Medford BLM issues grazing leases as a component of its multiple-use program. Cattle grazing are one of the primary uses on the federal lands within the Little Butte Creek level 5 watershed. Eighty-six percent of all BLM-managed lands are allocated to grazing allotments (USDI Bureau of Land Management 1997). Grazing on these allotments contributes to the social and economic well being of several lessees, who rely on public range resources for grazing.

There is a need to assess the terms and conditions of these grazing leases for consistency with the Medford RMP, the Northwest Forest Plan, the requirements of 43 CFR 4180 Fundamentals of Rangeland Health, and maintaining or making significant progress toward meeting the *Standards for Rangeland Health and Guidelines for Grazing Management for Public Lands in Oregon and Washington* (1997). In general, these standards require maintaining the functioning condition of watersheds, maintaining healthy biotic communities, meeting water quality standards, and protecting habitats for special status species.

The Rangeland Health Assessments were conducted in summer 2003. These assessments identified water quality, ecological processes, and plant community conditions that are currently not meeting the requirements of 43 CFR 4180 Fundamentals of Rangeland Health and *Standards for Rangeland Health and Guidelines for Grazing Management for Public Lands in Oregon and Washington* (1997) (table 1). These regulations require that resource conditions on public land meet or are making significant progress toward meeting specified standards which are

indicative of rangeland health. In general, these standards require maintaining the functioning condition of watersheds, maintaining healthy biotic communities, meeting water quality standards, and protecting habitats for special status species.

Findings

Table 1: Findings of the Oregon Standards for Rangeland Health

Allotment Name	Standard 1 Watershed Function- Uplands	Standard 2 Watershed Function- Riparian	Standard 3 Ecological Processes	Standard 4 Water Quality	Standard 5 Native, T&E, and Locally Important
Antelope Road	1, 5	4, 5	1, 5	4, 5	1, 5
Canal	1, 5	1, 5	3, 6	1, 5	3, 6
Brownsboro	1, 5	1, 5	3, 6	1, 5	3, 6
Yankee Reservoir	1, 5	1, 5	3, 6	1, 5	3, 6

1. **Meeting** standard, 2. **Not meeting** standard, **making significant progress**, 3. **Not meeting** standard, **livestock are** significant factors, 4. **Not meeting** standard, **livestock are not** significant factors, 5. **Conforms with guidelines**, 6. **Does not conform** to guidelines.

1.5 Proposed Action

The proposed action is to reissue grazing leases on the Antelope Road, Brownsboro, Canal, and Yankee Reservoir allotments at the same animal unit month (AUM) levels, seasons-of-use, and with the same terms and conditions currently in effect. The proposed action would permit 111 cow/calf pairs (98 AUMs) to graze on 840 acres on four Medford District Bureau of Land Management livestock allotments for a term of 10 years (Table 2).

One AUM is the amount of forage needed to feed one cow/calf pair for one month. Total AUMs represent the number of cow/calf pairs multiplied by the number of months included in the season of use. An authorization that allows the turn-out of one cow/calf pair for five months would have a total of five AUMs. The AUMs in Table 2 only reflect the forage that would be used on federal lands. On the Brownsboro Allotment, the lease is for 50 cow/calf pairs for 2½ months. This would calculate to 125 AUMs. However, the AUMs for this allotment were calculated based on the percent of the forage area that is public land. With the inclusion of the total forage acres, total forage area is approximately 5.4 percent public land and therefore, 5.4 percent of the 125 AUMs is approximately 7 AUMs.

Table 2. Grazing Seasons and Intensities for the Proposed Action.

Allotment Name	Number of Cows	AUMs	Season	BLM Acres
Antelope Road	13	19	4/16 to 5/30	200
Brownsboro	50	7	4/1 to 6/15	80
Canal	38	57	5/1 to 6/15	440
Yankee Reservoir	10	15	5/1 to 6/15	120

All of the allotments lie within the Little Butte Creek level 5 watershed. The federally owned portions of these allotments are designated as Matrix under the Northwest Forest Plan and are non-Key Watershed.

1.6 Decisions to be Made

The Ashland Field Manager, as the responsible official, will make the following decisions based on the interdisciplinary analysis summarized in this Environmental Assessment:

- To renew the grazing leases on these four allotments at existing AUM levels, seasons of use, and with the same terms and conditions,
- To implement an alternative to the Proposed Action in accordance with 43 CFR, Grazing Regulations, § 4110.3-3, Implementing Changes in Active Use, or
- To take no action at this time.

1.7 Scoping Process

Scoping is the process the BLM uses to identify issues related to the proposal (40 CFR 1501.7) and determine the extent of environmental analysis necessary for an informed decision. A letter describing the Scoping Proposal and inviting comments was mailed to interested individuals, organizations, and other agencies on October 26th and 30th, 2003.

Two written responses were received. Issues related to the Scoping Proposal were identified by the interdisciplinary team after reviewing the input received during scoping. Issues that could not be resolved with the Proposed Action will be carried forward for analysis as significant issues.

1.8 Issues Related to the Proposed Action

Issues identified during scoping that could not be resolved through the modification of the Scoping Proposal into the Proposed Action will be considered. These issues are presented below in context of how they relate to the Proposed Action.

1.8.1 Issue 1 (Riparian Conditions)

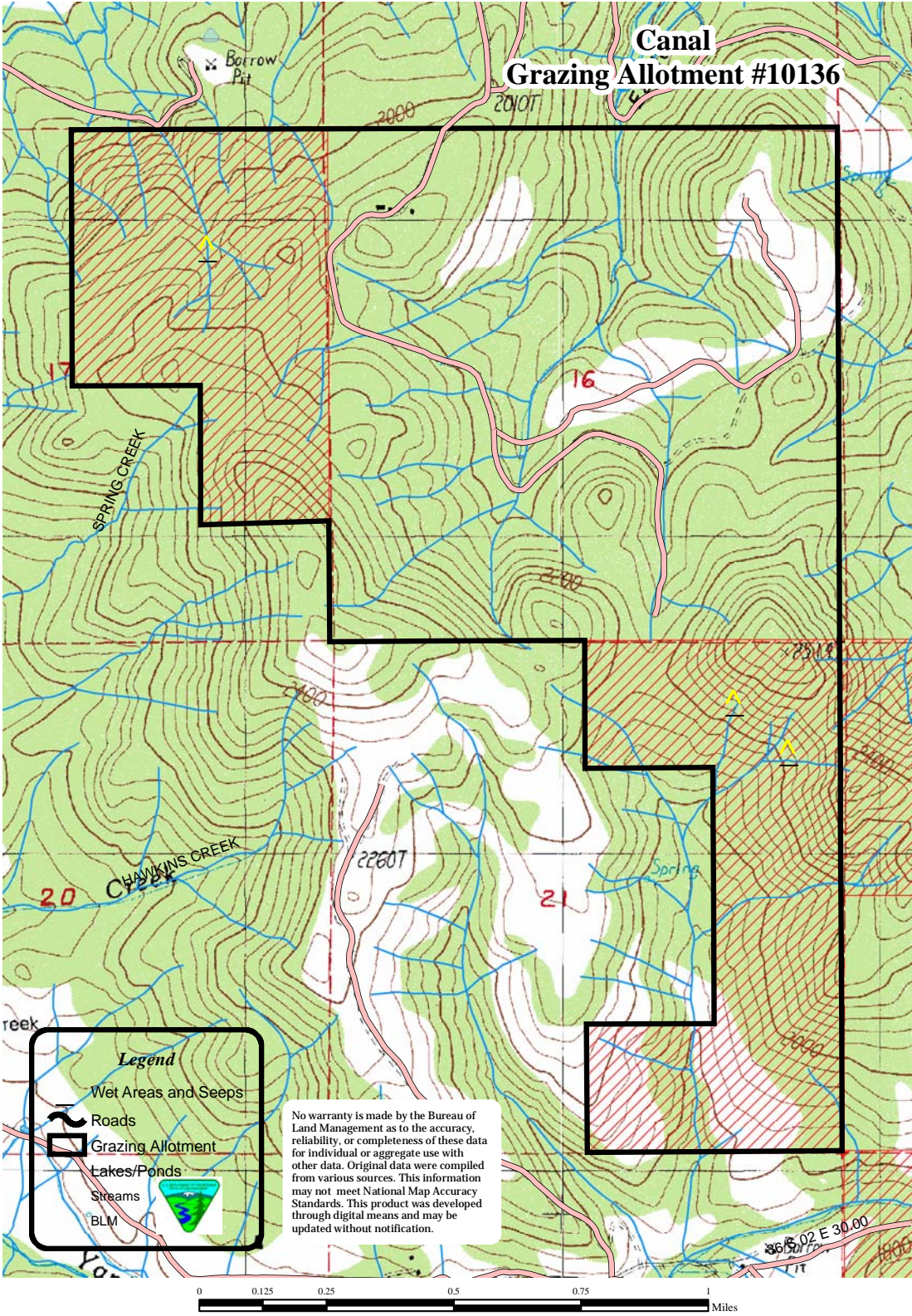
Riparian and wetland areas are the most productive and highly prized resources found on BLM lands. These areas play a significant role in restoring and maintaining the chemical, physical, and biological integrity of water sources (USDI BLM 1993, USDI BLM 1994).

Livestock tend to spend a disproportionate amount of time in riparian zones because of associated high quality forage, available water, and cooler temperatures. Livestock grazing in riparian areas can change, reduce or eliminate vegetation. This may reduce stream shading, potentially leading to increased temperatures at the site scale.

Grazing in riparian areas can increase stream sedimentation, bank erosion, and compaction. Soils in riparian areas are particularly susceptible to compaction because cattle tend to congregate there, and soils remain moist most of the time. Soil compaction from grazing reduces soil porosity, and therefore, the water-holding capacity of soils. Soil water-holding capacity is particularly important in the wet areas and seeps. These areas provide ground water storage. Cattle use in these areas has changed the fragile soil composition and structure. Trampling by cattle reduces the porosity in wetlands and thus reduces the volume of water that can be contained in the macropores. The indirect effect of this compaction is less water storage capabilities and reduced contribution to late-season streamflows.

Monitoring of livestock impacts on the Canal Allotment during summer 2003 has shown three areas of high forage utilization and trampling within riparian areas (“hot spots”) (Figure 2).

Figure 2. Riparian areas with high forage utilization and trampling in the Canal Allotment.



1.8.2 Issue 2 (*Plant Communities*)

Livestock use has influenced plant communities on the District. Heavy livestock grazing in the late 19th and early 20th centuries has contributed to the conversion of the area from perennial grasses to dominance by less desirable annual grasses.

The vegetation layer most affected by livestock grazing (forb and grass layer) is dominated by non-native species. The degree of invasion by these nonnative plants indicates a moderate to extreme departure from the ecological reference condition.

The shrub and tree layers are affected by livestock grazing. A reduction in biomass and density of native perennial grasses allows dense tree recruitment. A reduction in fine fuels affects how low intensity fire is carried through the area. The effects of fire suppression exacerbated by livestock grazing have altered the structure of the oak woodlands and conifer forests. Oregon white oak growth form has shifted from an open grown (savannah) form to a straighter, multiple stemmed (forest) form.

Continuing, reducing, or removing livestock grazing alone may not provide for the restoration of the plant communities on the four allotments.

1.8.3 Issue 3 (*Bureau Sensitive Plants*)

A large population of the Bureau Sensitive plant *Ranunculus austro-oreganus* is located the Canal Allotment and this plant is scattered throughout the Antelope Road Allotment.

The above ground growing season of *Ranunculus austro-oreganus* extends from March through May. The grazing season for Canal Allotment is currently May 1st through June 15th and April 16th through May 30th for Antelope Road. *Ranunculus austro-oreganus* is exposed to direct and indirect effects of livestock grazing, such as trampling, herbivory, plant community structure and composition alteration.

The Oregon State Office of the BLM directs the BLM Districts to protect, manage, and conserve Bureau Sensitive species and their habitats such that any Bureau action will not contribute to the need to list any of these species (BLM Instruction Memorandum No. OR-2003-054).

1.8.4 Issue 4 (*Noxious Weeds*)

There is concern for the presence of noxious weed populations on the allotments which can out-compete rare species for space, water and light and change the composition and function of native plant communities. *Cirsium vulgare* (bull thistle) has been found on Antelope Road Allotment and *Centaurea solstitialis* (star thistle) has been found on Canal Allotment.

Livestock grazing contributes to the spread of noxious weeds by physically transporting seeds and producing disturbed ground conditions favored by invasive weed species. The current level of use on these allotments provides for very localized (patchy) occurrences of weeds being spread due to livestock grazing. Indirectly, the change from a perennial grass dominant to an annual grass dominant community also contributes to conditions favoring invasive weed species. Without active weed control, noxious weed populations are expected to increase.

2. Alternatives Including the Proposed Action

The following sections present the alternatives considered, including the Proposed Action in detail.

2.1 Alternative 1 (No Change/Proposed Action)

This alternative renews the current leases for the Antelope Road, Brownsboro, Canal, and Yankee Reservoir Allotments. This alternative would maintain the current livestock numbers, AUMs, season of use, terms and conditions, and any existing range improvement maintenance agreements (Table 3).

Table 3. Alternative 1 (No Change/Proposed Action).

Allotment Name	Number of Cows	AUMs	Season	BLM Acres
Antelope Road	13	19	4/16 to 5/30	200
Brownsboro	50	7	4/1 to 6/15	80
Canal	38	57	5/1 to 6/15	440
Yankee Reservoir	10	15	5/1 to 6/15	120

Other Terms and Conditions (43 CFR 4130.3-2) of Current Leases

These terms and conditions are in addition to Mandatory Terms and Conditions (43 CFR 4130.3-1) required in grazing leases. They are specified by the authorized officer (shown on page 1 of each lease) and are intended to assist in achieving management objectives, provide for proper range management, or assist in the orderly administration of the public rangelands.

- Turn-out will be based upon range readiness.
- Actual use reports are to be returned within 15 days of off-date.
- Maintenance of assigned range improvements is a requirement of lease.
- Billings are due upon receipt and must be paid prior to turn-out.
- Late payment may result in unauthorized used and/or interest penalty.
- BLM approved ear tags are a requirement of lease.

Cooperative Agreements for Range Improvements

Antelope Road: Existing boundary and internal fences will be maintained so as to confine livestock at all times. Wires shall be “range-tight” as determined by the authorized officer. The cooperators shall provide materials sufficient to maintain all fences including wire, posts, labor, brush removal, downed-tree removal, and limb removal as needed.

Brownsboro: Fences in Sections 27 and 28, T. 36 S., R. 1 E., W.M. will be maintained each year prior to livestock turnout. They will be “range-tight” as determined by the range conservationist.

Canal: No existing cooperative agreements for range improvements.

Yankee Reservoir: No existing cooperative agreements for range improvements.

2.2 *Alternative 2*

This alternative responds to concerns expressed during scoping regarding impacts to wet areas and seeps within the Canal Allotment, as well as a request from the lessee to alter the season of grazing for the Antelope Road Allotment (Table 4). This alternative also contains additional Other Terms and Conditions intended to assist in achieving management objectives.

Table 4. Alternative 2.

Allotment Name	Number of Cows	AUMs	Season	Total Acres	BLM Acres
Antelope Road	13	19	5/1 to 6/15*	200	200
Brownsboro	50	7	4/1 to 6/15	1494	80
Canal	38	57	5/1 to 6/15	1089	440
Yankee Reservoir	10	15	5/1 to 6/15	1496	120

*The change in season would be on a three year trial basis. At the end of three years, conditions on the Antelope Road Allotment would be evaluated by an interdisciplinary team. If impacts to natural resources increase under this new season, the season of use would revert to 4/16 to 5/30.

Other Terms and Conditions (43 CFR 4130.3-2)

This alternative would include the same Other Terms and Conditions as in Alternative 1, except as modified or as follows below.

- Turn-out will be based upon range readiness*.
- Actual use reports are to be returned within 15 days of off-date.
- Lessees will be responsible for controlling unauthorized livestock from entering public lands during periods not authorized for grazing use.
- Lessees will conduct active management practices such as herding to promote livestock distribution to avoid sensitive areas and site damage from overuse.
- Maintenance of assigned range improvements is a requirement of lease prior to turnout.
- Cooperative Agreements for Range Improvements will be re-negotiated in the event new resource needs are identified.

- Billings are due upon receipt and must be paid prior to turn-out.
- Late payment may result in an unauthorized use finding and/or interest penalty.
- Lessees shall provide reasonable administrative access across private and leased lands to the Bureau of Land Management for the orderly management and protection of the public lands.
- Salt blocks would be placed at least ¼ mile from streams (intermittent and perennial), wet areas, ponds, springs, seeps, and special status species.
- BLM approved ear tags may be a requirement of the lease.

* Range Readiness is determined through a combination of soil moisture and plant phenology. No livestock are permitted to turn out until range readiness criteria have been met. These criteria may consist of plant development and soil moisture guidelines, which are used to assess conditions at key areas. To determine soil moisture, a technique such as the ribbon test is done in the field or a wet sample may be taken, weighed, dried, and then weighed again. The dry weight divided by the wet weight, multiplied by 100, is the soil moisture percentage by weight in the soil. These tests are done to determine range readiness in key areas of the allotment. The objective of these tests is to significantly reduce the risk of soil damage (compaction and displacement) that cattle use poses when allowed on the range before soil conditions are able to support use.

The plant assessment evaluates indicator species for forage readiness. It assures that vegetation is phenologically ready to be grazed by considering characteristics such as floral and leaf development.

Livestock grazing may temporarily be delayed, discontinued, or modified to allow for the reproduction, establishment, or restoration of vigor to plants, provide for improvement of riparian areas to achieve proper functioning or for the protection of other rangeland resources and values consistent with objectives of applicable land use plans, or to prevent compaction of wet soils, such as when delay of spring turnout is required because of weather conditions or lack of plant growth.

Cooperative Agreements for Range Improvements

This alternative would include the Cooperative Agreements for Range Improvements identified for Alternative 1 and the following.

- A wet area at the top of an intermittent stream in the north portion of the Canal Allotment (Section 17) would be fenced by the BLM and maintained by the lessee (Figure 2).
- Two seeps in the south portion of the Canal Allotment (Section 21) would be fenced by the BLM and maintained by the lessee (Figure 2).

2.3 *Alternative 3*

This alternative responds to the issue related to plant communities within the allotments. Much of the area has been converted from perennial grasses to less desirable annual grasses through various disturbance mechanisms. This conversion has resulted in a decline of floral diversity in meadows and other areas where concentrated livestock use historically occurred. This alternative contains the same Other Terms and

Conditions and Cooperative Agreements for Range Improvements as for Alternatives 1 and 2.

Table 5. Alternative 3.

Allotment Name	Number of Cows	AUMs (for Seasons Grazed)	Season	BLM Acres
Antelope Road	13	9	Staggered Three-Week Seasons*	200
Brownsboro	50	4	Rest for 3-5 Years Followed by Rest-Rotation**	80
Canal	38	57	Rest for 3-5 Years Followed by Rest-Rotation**	440
Yankee Reservoir	10	15	Rest for 3-5 Years Followed by Rest-Rotation**	120

*Season would alternate each year (spring, early summer, and summer). The first year would be a spring season, 5/1 to 5/21; the second year would be early summer, 5/22 to 6/11; the third year would be summer, 6/12 to 7/2; the fourth year would rotate back to a spring season; and so on.

**These allotments would not be grazed for 3-5 years. Grazing would then be administered on a rest-rotation basis (a season of use followed by a season of rest). The grazing season would be 5/1 to 6/15 after the rest period.

Other Terms and Conditions (43 CFR 4130.3-2)

Other Terms and Conditions would be same as those identified for Alternatives 1 and 2.

Cooperative Agreements for Range Improvements

Cooperative Agreements for Range Improvements would be the same as those identified for Alternatives 1 and 2.

2.4 Alternative 4 (No Grazing)

This alternative would terminate grazing leases for the Antelope Road, Brownsboro, Canal, and Yankee Reservoir Allotments. In accordance with 43 CFR 4110.3-3, active use of the allotments would terminate at the close of the 2007 grazing season.

2.5 Resource Area Projects Common to All Alternatives

Treatments intended to improve upland conditions would be implemented. The treatments may include, but are not limited to, the following:

- Noxious weeds would be treated by control techniques including chemical, mechanical, manual, and biological methods.
- Fuel hazard reduction treatments and prescribed burns would occur to rid excess fuel and to facilitate plant community restoration.
- Native plant seeding or planting would occur in treatment areas and at heavily impacted sites.

Treatments of these types would require subsequent planning with the appropriate level of environmental analysis, but have been analyzed with respect to effects on the alternatives. The analysis can be found in the Affected Environment Chapter 3 under each alternative.

3. *Affected Environment*

This chapter contains descriptions of the existing environment that may be affected by the alternatives under consideration.

3.1 *Hydrology*

The BLM portions of these allotments are located in T. 36 S., R. 1 E., Sections 17, 21, 27, 28, and 29; and T. 37 S., R. 1 E., Section 5, W.M. The grazing leases are within the Upper Antelope Creek, Little Butte-Lick Creeks, Lower Little Butte Creek, and Lower Antelope Creek level 6 hydrologic unit code (HUC) subwatersheds (Table 6) within the Little Butte Creek level 5 watershed.

Table 6. Drainage Information for Each Allotment by Site and Level 6 Subwatersheds.

Allotment Name	Site Level	HUC 6
Antelope Road	Tributaries to Antelope Creek	Upper Antelope Creek
Brownsboro	Tributaries to Yankee Creek	Upper Antelope Creek
Canal	Tributaries to South Fork Little Butte and Yankee Creek	Upper Antelope Creek, Lower Little Butte Creek, Little Butte -Lick Creeks, and Lower Antelope
Yankee Reservoir	Tributaries to Yankee Creek	Upper Antelope Creek

3.1.1 *Watershed Analysis Recommendations*

The Little Butte Creek Watershed Analysis (USDI BLM 1997) characterized the aquatic, riparian, terrestrial, and human features of the entire Little Butte Creek watershed. The Little Butte Creek watershed is approximately 238,600 acres (48 percent federal ownership, 50 percent private ownership).

The Little Butte Creek Watershed Analysis associated past and present livestock grazing with impacts to riparian and aquatic habitat, vegetation communities, and the spread of noxious weeds. The watershed analysis listed two high priority recommendations to address the objective of managing livestock in a manner that maintains or improves Riparian Reserves to meet the goals of the Aquatic Conservation Strategy. These recommendations are:

1. Stress the importance of properly functioning riparian areas in the issuance of grazing authorizations.
2. Implement Best Management Practices and the Northwest Forest Plan to ensure movement toward land use objectives.

3.1.2 Riparian Condition

Riparian areas (streams, wetlands, springs, and seeps) within the four allotments were inventoried in 2002 and 2003 using BLM's *Process for Assessing Proper Functioning Condition*, Technical Reference 1737-9 (Prichard et al. 1993). The process used an interdisciplinary evaluation to rate riparian areas as either "Proper Functioning Condition", "Functioning at Risk", or "Nonfunctional". The ratings are defined as:

Proper Functioning Condition (PFC) – Riparian-wetland areas are functioning properly when adequate vegetation, landform, or large woody debris is present to dissipate stream energy associated with high waterflows, thereby reducing erosion and improving water quality; filter sediment, capture bedload, and aid floodplain development; improve flood-water retention and ground-water recharge; develop ponding and channel characteristics to provide the habitat and the water depth, duration, and temperature necessary for fish production, waterfowl breeding, and other uses; and support greater biodiversity. The functioning condition of riparian-wetland areas is a result of interaction among geology, soil, water, and vegetation.

Functional—At Risk (FAR) – Riparian-wetland areas that are in functional condition but an existing soil, water, or vegetation attribute makes them susceptible to degradation.

Nonfunctional – Riparian-wetland areas that clearly are not providing adequate vegetation, landform, or large woody debris to dissipate stream energy associated with high flows and thus are not reducing erosion, improving water quality, etc., as listed above. The absence of certain physical attributes, such as a floodplain where one should exist, is an indicator of nonfunctioning conditions.

The riparian conditions for allotments analyzed in this EA are identified in Table 7.

Table 7. Current Riparian Conditions for Allotments Analyzed.

Allotment	Riparian Condition
Antelope Road	One long-duration intermittent stream is FAR with a downward trend; two short-duration intermittent streams are FAR with a downward trend; one short-duration intermittent stream is in PFC; and two perennial springs.
Brownsboro	One long-duration intermittent stream is in PFC.
Canal	Section 17 has one long-duration intermittent stream that is FAR with an upward trend; one short-duration intermittent stream that is FAR with a downward trend; one short-duration intermittent stream that is in PFC; and one wet area at the top of an intermittent stream that is being impacted by livestock. Section 21 has two long-duration stream reaches that are in PFC; one long-duration stream reach that is FAR with an upward trend; three short-duration stream reaches that are in PFC; and two long-duration seeps that are being impacted by livestock.
Yankee Reservoir	Two short-duration intermittent streams are in PFC; one long-duration intermittent stream is Nonfunctional.

3.1.2.1 Riparian Conditions on Antelope Road Allotment

This allotment is located along Antelope Road which parallels Antelope Creek. Cattle are prevented from accessing Antelope Creek by well-maintained allotment boundary fences and a section of private property. Thirteen cow/calf pairs use this 200-acre allotment from April 16th through May 30th.

Riparian areas in this allotment are generally not in properly functioning condition (PFC) (Table 7). This is most likely a result of other management practices and not directly related to cattle use as authorized by this lease. Private grazing lands surround this allotment and the upstream property is being developed as residential. In general, private agricultural (including grazing) and residential lands dominate the Antelope Creek drainage. Associated stream impacts include: water dams and diversions, water withdrawals, grazed riparian areas, and sedimentation from roads and other development.

There are two small perennial springs on the western side of the allotment. These springs do not contribute enough surface flow to maintain a perennial outlet stream, but are important features on the landscape for their fragility and rarity and because they function as a sponge, holding water throughout the year. Hoof prints and grazed riparian vegetation were observed at these sites (Smith 2003). All the streams in this allotment (other than the fenced-off Antelope Creek) are intermittent (go dry in the summer) and flow into Antelope Creek. In the lower reaches of the intermittent

tributaries, stream surveys conducted by the BLM in 2003 identified multiple locations of streambank trampling and hoof/soil impacts.

Most of the stream channels have rocky or bedrock substrate and sparse riparian vegetation. Riparian ground cover includes grasses, poison oak, and Oregon ash. White oak, Douglas-fir, madrone, and serviceberry dominate the riparian understory while Ponderosa pine and Douglas-fir dominate the riparian overstory. Riparian vegetation associated with the two perennial springs includes rushes, sedges, Oregon ash, willow, and Himalayan blackberry. Vegetation is lacking along the lower reaches of stream channels in this allotment, possibly because of result of grazing.

Fuels reduction treatments recently took place on approximately 85 acres of public lands and 25 acres of private lands manually clearing brush from within the upper elevations of this allotment. The areas that have been opened up through these treatments may see increased livestock utilization.

3.1.2.2 Riparian Conditions on Brownsboro Allotment

Eighty acres of BLM land make up 5.4 percent of this allotment which supports fifty cow/calf pairs from April 1st through June 15th.

There are no perennial streams in this allotment; however, they may still have surface flow during the season of use. In 2002, riparian areas in the BLM portion of the allotment were assessed for PFC. The unnamed long-duration intermittent tributary to Yankee Creek on the 80 acres of BLM within the allotment is in Proper Functioning Condition (Table 7). Yankee Creek is outside the boundaries of the allotment. Livestock use does not seem to be a major impact on riparian areas in the BLM portion of the allotment. Grazing use on the uplands is slight to light and vegetative cover is adequate to ensure water percolation into the soil.

Riparian groundcover includes grasses, sedges, ocean spray, and hazel; riparian understory is comprised of Oregon ash, ocean spray, and ceanothus; and riparian overstory is dominated by white oak, madrone, ponderosa pine, and Oregon ash.

3.1.2.3 Riparian Conditions on Canal Allotment

Four hundred forty acres of BLM land supports 38 cow/calf pairs from May 1st through June 15th on this allotment. The 440 BLM acres are made up of two parcels: 200 acres in Section 17 draining into Little Butte Creek and 240 acres in Section 21 draining into Yankee Creek, above Yankee Reservoir. All the intermittent tributaries in Section 17 drain into an irrigation canal.

There are no perennial streams in the allotment. Throughout the allotment, most of the intermittent streams are in PFC or Functioning at Risk (FAR) with an upward trend (USDI BLM 2002). One stream segment is FAR with a downward trend (Table 7).

Stream surveys conducted in 2002 by the BLM identified bank trampling and excessive hoof/soil impacts on several stream reaches in the allotment. Impacted reaches in Section 17 and 21 were re-visited in 2003. Static and degrading conditions were noted in the long-duration headwater seeps in Section 21. One headwater wet area with hoof impacts was reported in Section 17.

Grazing seems to be adversely impacting wet areas and seeps on this allotment. Over the long-term, compaction of these spongy wet soils would lead to decreased water storage capacity and decrease hydrologic function. Bank trampling and grazing of riparian vegetation have resulted in degrading condition of the long-duration seeps; however, this appears to be a concentrated area and is not reflective of conditions throughout the allotment. Downstream banks are relatively unaffected. Only five percent of the stream reaches surveyed had cattle impacts identified.

Riparian groundcover includes grass and poison oak while riparian understory is comprised of serviceberry, Oregon ash, willow, and ceanothus. Riparian overstory is dominated by Oregon ash, Douglas-fir, white oak, and madrone.

3.1.2.4 Riparian Conditions on Yankee Reservoir Allotment

One hundred twenty acres of BLM land support ten cow/calf pairs from May 1st through June 15th. Forty acres of BLM drain into Yankee Reservoir and 80 acres drain into Yankee Creek.

All the streams on BLM land are intermittent. Yankee Creek is the only perennial stream in the allotment, but it is not on BLM land within this allotment.

In 2002, BLM completed PFC assessments on the streams within this allotment (USDI BLM 2002). These unnamed intermittent tributaries to Yankee Creek and Yankee Reservoir were either in PFC or Nonfunctional (Table 7). In one nonfunctional reach, the surveyors identified a deeply incised channel with a lack of riparian vegetation. where a small reservoir failed catastrophically. Livestock use does not seem to be a major impact on the Yankee Creek system.

Riparian groundcover includes grasses, poison oak, and Oregon ash; riparian understory is comprised of white oak, poison oak, madrone, and serviceberry; and riparian overstory is dominated by ponderosa pine and Douglas-fir.

3.1.3 Water Quality

The 1996 amendments to the Safe Drinking Water Act (SDWA) mandated that state agencies conduct source water assessments for every public water system. A federally-regulated public water system provides water for human consumption through pipes or other constructed conveyances to at least 15 service connections or serves an average or at least 25 people for at least 60 days a year. The states must delineate the groundwater and surface water source areas which supply public water systems, inventory each of

those areas to determine potential sources of contamination, and determine the most susceptible areas at risk for contamination.

The allotments fall within the source water areas for the Medford Water Commission and the cities of Gold Hill, Rogue River, and Grants Pass. The surface water source for these four public water systems is the Rogue River. Little Butte Creek is a tributary to the Rogue River. The allotments are located approximately 8-10 miles upstream from the closest public water system intake.

A source water assessment is in progress for the Medford Water Commission and assessments have been completed by the DEQ and the Oregon Department of Human Services for the cities of Gold Hill, Rogue River, and Grants Pass. The completed assessments include an inventory of potential contaminant sources within the source water areas. Grazing animals were identified as a potential contaminant source for the Gold Hill, Rogue River, and Grants Pass drinking water protection areas. No other potential contaminant sources that could occur within the allotments were identified in the state source water assessments.

The Oregon Environmental Quality Commission has adopted numeric and narrative water quality standards to protect designated beneficial uses. In practice, water quality standards have been set at a level to protect the most sensitive uses. Cold-water aquatic life such as salmon and trout are the most sensitive beneficial uses in Little Butte Creek and its tributaries (ODEQ 2004:5). The Oregon Department of Environmental Quality (DEQ) is required by the federal Clean Water Act (CWA) to maintain a list of stream segments that do not meet water quality standards for one or more beneficial uses. This list is called the 303(d) list because of the section of the CWA that makes the requirement. DEQ's 2004/2006 303(d) list is the most recent listing of these streams (ODEQ 2006a).

The BLM is recognized by Oregon DEQ as a Designated Management Agency for implementing the Clean Water Act on BLM-administered lands in Oregon. The BLM and DEQ have a Memorandum of Agreement (MOA) that defines the process by which the BLM will cooperatively meet State and Federal water quality rules and regulations. In accordance with the MOA, the BLM in cooperation with the Forest Service, DEQ, and the Environmental Protection Agency is implementing the Forest Service and Bureau of Land Management Protocol for Addressing Clean Water Act Section 303(d) Listed Waters (USDA and USDI 1999). Under the Protocol, the BLM will protect and maintain water quality where standards are met or surpassed, and restore water quality limited water bodies within their jurisdiction to conditions that meet or surpass standards for designated beneficial uses. The BLM would also adhere to the State Ant degradation Policy (OAR 2005; 340-041-0004) under any proposed actions. The DEQ has not determined the Total Maximum Daily Load (TMDL) for the Rogue Basin.

Section 303 of the Clean Water Act further requires that Total Daily Maximum Loads (TMDLs) be developed for waters included on the 303(d) list. A TMDL defines the

amount of pollution that can be present in the water body without causing water quality standards to be violated. A Water Quality Management Plan (WQMP) is developed by DEQ to describe a strategy for reducing water pollution to the level of the load allocations and waste load allocations prescribed in the TMDL. The approach is designed to restore water quality and result in compliance with water quality standards, thus protecting the designated beneficial uses of water of the state. The Oregon DEQ has not yet completed the Rogue Basin TMDL and the WQMP.

In advance of a TMDL setting specific numeric targets for the planning area, the Oregon statewide narrative criteria found in OAR 340-041-0007(1) (ODEQ 2006b) is the water quality criteria that applies to BLM management.

(1) Notwithstanding the water quality standards contained in this Division, the highest and best practicable treatment and/or control of wastes, activities, and flows must in every case be provided so as to maintain dissolved oxygen and overall water quality at the highest possible levels and water temperatures, coliform bacteria concentrations, dissolved chemical substances, toxic materials, radioactivity, turbidities, color, odor, and other deleterious factors at the lowest possible levels.

Two streams with tributaries within the allotments are included in DEQ's 2004/2006 303(d) list: Antelope Creek and Little Butte Creek (Table 8). Both streams are listed as water quality limited for temperature (summer) and *E.coli* (fall/winter/spring/summer). Little Butte Creek is also listed for dissolved oxygen, fecal coliform, and sedimentation. Stream temperature, sedimentation, dissolved oxygen, *E. coli* and fecal coliform can be affected by grazing. Habitat and flow modification were delisted on the 2002 303(d) list because it is not a direct result of a pollutant and therefore, no load capacity or allocation can be established. All of the tributaries within the Antelope Road Allotment flow into Antelope Creek. Tributaries in the northern portion of the Canal Allotment flow into Little Butte Creek. Tributaries in the southern portion of the Canal Allotment, Brownsborro Allotment, and Yankee Road Allotment flow into Yankee Creek, which is not a water quality limited stream.

Table 8. 2004/2006 303(d) Listings in the Project Area.

303(d) List Date	Stream Segment	Parameter	Season	Beneficial Uses	Total Miles Affected
2004	Antelope Creek	E Coli	Fall/Winter/Spring	Water contact recreation	19.7
2004	Antelope Creek	E Coli	Summer	Water contact recreation	19.7
2004	Antelope Creek	E Coli	Summer	Water contact recreation	MP 19.7
1998	Antelope Creek	Temperature	Summer (Rearing 17.8°C)	Anadromous fish passage Salmonid fish rearing	19.7
2004	Little Butte Creek	Dissolved Oxygen	September 15 - June 15 (spawning)	Salmon and steelhead spawning	16.7
2004	Little Butte Creek	Dissolved Oxygen	Year Around (non-spawning)	Cold-water aquatic life	16.7
2004	Little Butte Creek	E Coli	Fall/Winter/Spring	Water contact recreation	16.7
2004	Little Butte Creek	E Coli	Summer	Water contact recreation	16.7
1998	Little Butte Creek	Fecal Coliform	Fall/Winter/Spring	Water contact recreation	16.7
1998	Little Butte Creek	Fecal Coliform	Summer	Water contact recreation	16.7
1998	Little Butte Creek	Sedimentation	Undefined	Resident fish and aquatic life Salmonid fish rearing Salmonid fish spawning	16.7
1998	Little Butte Creek	Temperature	Summer (Rearing 17.8°C)	Anadromous fish passage Salmonid fish rearing	16.7

Best management practices (BMPs) are required by the federal Clean Water Act, as amended by the Water Quality Act of 1987, to reduce nonpoint source pollution to the maximum extent practicable. BMPs are considered the primary mechanism to achieve Oregon water quality standards.

Best management practices are defined as methods, measures, or practices selected on the basis of site-specific conditions to ensure that water quality will be maintained at its highest practicable level. BMPs include, but are not limited to, structural and nonstructural controls, operations, and maintenance procedures. BMPs can be applied before, during, and after pollution-producing activities to reduce or eliminate the introduction of pollutants into receiving waters (40 CFR 130.2, EPA Water Quality Standards Regulation).

Best management practices are currently being implemented on the allotments to protect, maintain, or improve water quality, aquatic habitat, riparian-wetland areas and upland plant communities; to achieve properly functioning riparian ecosystems. Selection of the appropriate BMPs will help meet the Aquatic Conservation Strategy

objectives identified in the Northwest Forest Plan. The Northwest Forest Plan and the Medford RMP are designed to meet the objectives of water quality and proper riparian function and health.

Best management practices related to livestock grazing include, but are not limited to, the following:

1. Consider fencing springs, seeps, and water developments to protect water quality, aquatic habitat, and riparian ecosystems.
2. Ensure rest for plant growth and vigor during the critical growing period.
3. Monitor, evaluate, and adjust livestock management practices to meet resource objectives.
4. Resolve management conflict through the development of grazing management plans.
5. Promote ecological recovery through appropriate forage utilization levels.
6. Develop and implement recovery plans for riparian areas.

3.2 Fisheries

3.2.1 Antelope Road Allotment

Antelope Creek supports populations of coho salmon (*Oncorhynchus kisutch*) confirmed to river mile 5.0 and suspected to river mile 6.3 (ODFW 1996), steelhead (*O. mykiss*) confirmed to river mile 16.9 (ODFW 2001), and cutthroat trout (*O. clarkii*) confirmed to river mile 20.1 (ODFW 2001). Suspected coho presence to river mile 6.3 is based on observations of suitable habitat, no identified barriers, and undocumented reports from landowners (Doino 2003). With respect to the allotment boundary, steelhead and cutthroat trout are adjacent to the boundary and coho salmon are located approximately four miles downstream of the allotment.

Very little is known of the non-native aquatic species that reside in Antelope Creek. It is safe to assume they are present due to past supplementation programs and downstream reservoirs (i.e. Yankee Reservoir) that certainly harbor a number of warm water species.

The intermittent streams may seasonally support fish populations in the lower reaches. Frogs, salamanders, mollusks, and aquatic insects also use these areas at different times of the year and at different life stages. Due to the intermittent nature of the streams, it is probable that only widely distributed species with short aquatic-dependant life cycles would be present (e.g. tree frogs, *Baetis* mayflies).

3.2.2 Brownsboro Allotment

Yankee Reservoir is downstream of the intermittent tributaries that flow through this allotment, inhibiting the upstream migration of salmonids. Fish that reside in Yankee

Reservoir are probably non-native and it is unlikely that any of these fish would use the intermittent tributaries that flow through the Brownsboro Allotment. It is approximately 0.5 miles from the BLM portion of this allotment to Yankee Reservoir.

3.2.3 Canal Allotment

Fish are not present within the boundaries of this allotment. Coho salmon are present in Little Butte Creek, 0.5 miles downstream of the BLM portion of this allotment and in Antelope Creek, three miles downstream of the BLM portion of the allotment.

3.2.4 Yankee Reservoir Allotment

Coho salmon are confirmed in Antelope Creek, approximately 2.5 miles downstream of this allotment. Yankee Reservoir drains into Yankee Creek which flows for approximately three miles before entering Antelope Creek. Yankee Creek supports populations of summer steelhead to river mile 1.0 and rainbow trout to river mile 3.0.

3.3 Botany

3.3.1 Upland Oak Savannah Vegetation

These allotments occur in the river bottoms and foothills of the Klamath Mountains ecoregion. The predominant plant community in the project area is Oregon white oak woodland. Other plant communities include grassland, chaparral, and conifer forest. Prior to Euro-American settlement, the ecoregion landscape was dominated by Douglas-fir forests, Ponderosa pine woodlands, and oak woodlands. The Oregon Gap Analysis Project shows a stark decline (approximately 33 percent in the ecoregion, approximately 76 percent in the Medford District) in the amount of oak woodlands in Oregon since Euro-American settlement. The decline of the Oregon white oak habitat type is attributed to urban development, fire suppression, and other human uses.

The health of this rapidly vanishing habitat type is declining, mainly due to noxious weed and non-native plant invasions. The forb and grass layer of the open meadows and some oak woodland within the project area are dominated by non-native species. The degree of invasion by these non-native plants indicates a moderate to extreme departure from the ecological reference condition (Table 9). A healthy, properly functioning ecosystem relies on the interactions of native and naturally occurring species. The change of those plant communities from a native perennial grass dominant to an introduced annual grass dominant has affected the proper functioning of the nutrient and hydrologic cycles.

The effects of fire suppression exacerbated by historic overgrazing by livestock have affected the structure and composition of the shrub and tree layers of the oak woodlands and conifer forests. A reduction in biomass and density of native perennial grasses has

allowed dense tree recruitment. A reduction in fine fuels affects how low intensity fire is carried through the area. Oregon white oak growth form has shifted from an open grown (savannah) form to a straighter, multiple stemmed (forest) form.

Data presented in the Oregon Gap Analysis shows a very low level of protection for the Klamath Mountains ecoregion Oregon white oak habitat type. Over 80 percent of this habitat type is in private ownership and therefore threatened by conversion from the natural habitat type. The Klamath Mountains ecoregion Oregon white oak habitat type is rare, the amount of existing habitat is declining, and much of the remaining habitat is threatened with loss by conversion or it exists in a degraded condition.

3.3.2 Wetland Vegetation

Three small wet areas in the Canal allotment showed heavy utilization by livestock. Damage to the wetland vegetation and hydrologic cycle is due mainly to trampling and churning of the soil. Moderate to heavy annual herbivory and trampling has reduced the ability of these seeps to recover.

3.3.3 Threatened and Endangered Species

The allotments are within the range of federally listed plants (*Limnanthes floccosa*, and *Lomatium cookii*) and outside the range of federally listed (*Fritillaria gentneri* and *Arabis macdonaldiana*) defined by the U.S. Fish and Wildlife Service (USDI Fish and Wildlife Service 2003).

3.3.4 Northwest Forest Plan Survey and Manage Species

Recent surveys for Special Status Plants found large, moderately healthy populations of *Ranunculus austro-oreganus*, the Southern Oregon buttercup, in two of the four allotments (Table 9). These populations occur in the more open habitats of the allotments which includes the oak woodlands, widely spaced chaparral, and sporadically, in the savannahs.

Table 9. Current Condition, Botanical Resources

Allotment	Departure from Ecological Reference Condition	% BLM Oak Woodland	Special Status Plants	Wet Area Flora
Antelope Road	Moderate	63	<i>Ranunculus austro-oreganus</i>	None
Brownsboro	Moderate-Extreme	94	none	None
Canal	Moderate-Extreme	88	<i>Ranunculus austro-oreganus</i>	Damaged
Yankee Reservoir	Moderate-Extreme	85	none	None

Ranunculus austro-oreganus is found only in the valley bottoms and foothills of the Rogue River drainage in Jackson County. The typical habitat for this plant is Oregon white oak woodland. It is listed as a Bureau Sensitive species. Bureau Sensitive species

require, by Oregon State Office policy that BLM Districts will protect, manage, and conserve those species and their habitats such that any Bureau action will not contribute to the need to list the species.

There are 37 known sites of *Ranunculus austro-oreganus* on BLM managed land within the Medford District. Approximately 40% of these populations consist of 1000 individuals or more. Many of the known populations extend onto private lands. Although this species appears to be tolerant of moderate disturbance, suitable habitat is declining. Threats to this species include fire suppression, trampling by livestock, land conversion for human uses, displacement by noxious weeds and invasive introduced plants, and unmanaged off-highway vehicle use.

3.3.5 Weeds

There are no species from the federal noxious weed list in the project area. However, six species from the Oregon Department of Agriculture noxious weed list are present. All six are designated “B” weeds and one is also a “T” or target weed. “B” designated weeds are regionally abundant but may have limited distribution in some counties. “T” or target weeds are priority species and have a statewide management plan. There is concern for the presence of noxious weed populations which can out-compete rare species for space, water and light; and change the composition and function of native plant communities. A comprehensive list of noxious weeds and introduced plants is included in Table 10.

Table 10. *Noxious Weeds and Introduced Plants*

Scientific Name	Common Name	ODA List*
<i>Aira caryophylla</i>	Silver hairgrass	
<i>Avena fatua</i>	Wild oat	
<i>Bromus diandrus</i>	Ripgut brome	
<i>Bromus hordeaceus</i>	Soft brome	
<i>Bromus japonicus</i>	Japanese brome	
<i>Bromus tectorum</i>	Cheatgrass	
<i>Centaurea solstitialis</i>	Yellow star-thistle	B, T
<i>Cichorium intybus</i>	Chicory	
<i>Cirsium vulgare</i>	Bull-thistle	B
<i>Convolvulus arvensis</i>	Field bindweed	B
<i>Cynosurus echinatus</i>	Bristly dogstail grass	
<i>Dactylis glomerata</i>	Orchardgrass	
<i>Erodium cicutarium</i>	Redstem stork's bill	
<i>Galium parisiense</i>	Wall bedstraw	
<i>Holcus lanatus</i>	Common velvetgrass	

<i>Hypericum perforatum</i>	Common St. Johnswort	B
<i>Hypochaeris radicata</i>	Hairy catsear	
<i>Lactuca serriola</i>	Prickly lettuce	
<i>Leucanthemum vulgare</i>	Oxeye daisy	
<i>Lotus corniculatus</i>	Birdfoot deervetch	
<i>Myosotis discolor</i>	Changing forget-me-not	
<i>Plantago lanceolata</i>	Narrowleaf plantain	
<i>Poa bulbosa</i>	Bulbous bluegrass	
<i>Poa pratensis</i>	Kentucky bluegrass	
<i>Prunella vulgaris</i>	Common selfheal	
<i>Ranunculus repens</i>	Creeping buttercup	
<i>Rubus discolor</i>	Himalayan blackberry	B
<i>Rumex crispus</i>	Curly dock	
<i>Sonchus asper ssp. asper</i>	Spiny sowthistle	
<i>Taeniatherum caput-medusae</i>	Medusahead	B
<i>Torilis arvensis</i>	Spreading hedgeparsley	
<i>Tragopogon dubius</i>	Yellow salsify	
<i>Trifolium repens</i>	White clover	
<i>Valerianella locusta</i>	Lewiston cornsalad	
<i>Vicia sativa</i>	Garden vetch	
<i>Vulpia myuros var. hirsuta</i>	Rat-tail fescue	
<i>Vulpia myuros var. myros</i>	Rat-tail fescue	

* Oregon Department of Agriculture Noxious Weed Control Rating System:

“B” Designated Weed – a weed of economic importance which is regionally abundant but which may have limited distribution in some counties.

“T” Designated Weed – a priority noxious weed designated by the Oregon State Weed Board as a target on which the Oregon Department of Agriculture will develop and implement a statewide management plan.

The noxious weed, yellow star-thistle (*Centaurea solstitialis*) is found scattered throughout the project area and adjacent private lands. Weed treatments would be minimally successful because of the infestations on surrounding private land. This weed is common adjacent to roads and in highly disturbed areas. It occurs throughout the 48 contiguous United States and Canada with a few exceptions in the South and Northeast states. Yellow star-thistle can produce dense stands that displace native species and deplete soil moisture. Yellow star-thistle is listed by the Oregon State Weed Board as a “B” and a “T” noxious weed.

Medusahead rye (*Taeniatherum caput-medusae*) is found throughout the project area and adjacent private lands. This grass is common in disturbed, open grasslands but also invades oak woodlands and chaparral communities. It ranges throughout the western states and also in the northeast region. Medusahead rye prevents germination and

survival of native species, ties up nutrients, and contributes to fire danger in the summer. Medusahead is unpalatable to livestock and native wildlife except for early in the growing season.

St. Johnswort or Klamathweed (*Hypericum perforatum*) is found scattered throughout the project area. This weed is common adjacent to roads and in disturbed areas. While considered a noxious weed because of its effects on animals, it has a variety of human uses. It is found in all of the 48 contiguous states except Arizona, Utah, and Alabama. This weed has been partially controlled using biological control agents.

Himalayan blackberry (*Rubus armeniacus*) is found in the project area generally associated with ditches and other waterways but also frequents other disturbed areas. It is found throughout the western US and is used by humans mostly for food. Himalayan blackberry forms dense thickets that decrease the usable pasture area.

Bull thistle (*Cirsium vulgare*) is found scattered throughout the project area. It is commonly found in disturbed areas of little canopy cover but can invade undisturbed sites. It is found throughout North America. Bull thistle displaces native species and reduces the value of rangeland.

Field bindweed (*Convolvulus arvensis*) is found scattered throughout the project area. It is associated with many habitats but commonly found in open disturbed sites. It is found throughout North America. Field bindweed displaces native species and depletes soil moisture.

3.4 Soils

3.4.1 Soil Conditions within the Allotments

3.4.1.1 Antelope Road

The topography throughout this allotment is mainly hillslopes with a couple of intermittent draws dissecting the area. The slope ranges from 5 to 50 percent. The soil series identified on this allotment are Medco, McNull and McMullin. A brief description of these soils is listed below. The soil condition on this allotment is considered stable. There is adequate vegetation and litter cover, resulting in erosion rates slightly above natural levels. There are a series of off-highway vehicle (OHV) trails across the landscape on this allotment. The trails exhibited recent use and, in some places, some brush had been cut to facilitate trail construction. The OHV trails lack vegetation which increased the potential for off-site erosion during the winter rains.

3.4.1.2 Brownsboro and Canal Allotments

Most of the topography throughout these allotments is hilltops, hillslopes, and associated alluvial fans with slopes ranging from 3 to 55 percent. The soil series

identified on this allotment are Carney, Medco, McNull and McMullin. A brief description of these soils is listed below. In the southern portion of the Canal allotment small areas of rock outcropping are associated with the McMullin soil series. The soil conditions on these allotments are stable. The adequate vegetation cover results in erosion rates slightly above natural levels. There were a few small areas (approximately five square meters) where ungulates had traveled over the soil when the moisture level was above its liquid limits causing displacement. This displacement has a small impact on soil, slightly reducing productivity but there were no apparent signs of increased offsite erosion.

3.4.1.3 Yankee Reservoir Allotment

The topography of this allotment consists of hilltops, hillslopes with associated drainages ranging in slope from 2 to 50 percent. The soil series identified on this allotment are Medco, McNull and McMullin. A brief description of these soils is listed below. The soil condition on this allotment is relatively stable; however, signs of accelerated erosion are present. The plant composition and ground cover was less abundant than expected, considering the authorized use is only 15 AUMs. OHV trails are present in the western portion of the allotment with one running parallel and crossing an intermittent stream. An unauthorized pushup dam had been constructed toward the lower end of the stream.

3.4.2 Soil Characteristics

3.4.2.1 Carney Cobbly Clay

This moderately deep, moderately well-drained soil is on alluvial fans and hillslopes. It formed in alluvium and colluvium derived dominantly from tuff and breccia. Elevations range from 1,200 to 4,000 feet. The mean annual precipitation is 18 to 30 inches, the mean annual temperature is 48 to 54 degrees Fahrenheit, and the average frost-free period is 150 to 180 days. The native vegetation is mainly hardwoods and an understory of grasses, shrubs, and forbs.

Typically, the surface layer is dark brown, cobbly clay about 6 inches thick. The next layer is dark brown clay about 6 inches thick. The subsoil also is dark brown clay. It is about 23 inches thick. Weathered bedrock is at a depth of about 35 inches. The depth to bedrock ranges from 20 to 40 inches. In some areas the surface layer is stony.

Permeability is very slow in the Carney soil. Available water capacity is about 4 inches. The effective rooting depth is 20 to 40 inches. Runoff is slow or medium, and the hazard of water erosion is slight or moderate. The water table fluctuates between depths of 3.0 and 3.5 feet from December through April.

3.4.2.2 *McNull Loam*

This moderately deep, well-drained soil is on hillslopes. It formed in colluvium derived dominantly from andesite, tuff, and breccia. Elevations range from 1,500 to 4,000 feet. The mean annual precipitation is 20 to 40 inches, the mean annual temperature is 45 to 52 degrees Fahrenheit, and the average frost-free period is 100 to 160 days.

Typically, the surface is covered with a layer of needles, leaves, and twigs about 1 inch thick. The surface layer is dark reddish brown loam about 6 inches thick. The upper 6 inches of the subsoil is dark reddish brown clay loam. The lower 20 inches is dark reddish brown, cobbly clay. Weathered bedrock is at a depth of about 32 inches. The depth to bedrock ranges from 20 to 40 inches. In some areas the surface layer is stony or cobbly.

Permeability is slow in the McNull soil. Available water capacity is about 4 inches. The effective rooting depth is 20 to 40 inches. Runoff is medium, and the hazard of water erosion is moderate on slope of less than 35 percent and high on slopes greater than 35 percent.

3.4.2.3 *McMullin Gravelly Loams*

This soil is shallow and well-drained on hilltops and hillslopes. Elevation is 1,300 to 4,000 feet. The mean annual precipitation is 20 to 35 inches, the mean annual temperature is 45 to 52 degrees Fahrenheit, and the average frost-free period is 100 to 160 days. It formed in colluvium derived dominantly from andesite, tuff, and breccia.

Typically, the surface layer is dark reddish brown gravelly loam about 7 inches thick. The subsoil is dark reddish brown gravelly clay loam about 10 inches thick. Bedrock is at a depth of about 17 inches. The depth to bedrock ranges from 12 to 20 inches. In some areas the surface layer is stony.

Permeability is moderate in the McMullin soil. Available water capacity is about 2 inches. The erosion potential is high. This unit is used mainly for livestock grazing or wildlife habitat. The main limitations affecting livestock grazing are the slope, erosion, and compaction. The McMullin soil also is limited by the depth to bedrock. Areas of rock outcropping is often associated with this soil.

3.4.2.4 *Medco Cobbly Clay Loam*

This moderately deep, moderately well-drained soil is on hillslopes. It formed in alluvium and colluvium derived dominantly from andesite, tuff, and breccia. Elevation ranges from 1,500 to 4,000 feet. The mean annual precipitation is 20 to 35 inches, the mean annual temperature is 45 to 52 degrees Fahrenheit, and the average frost-free period is 100 to 160 days. The native vegetation is mainly hardwoods and an understory of grasses, shrubs, and forbs.

Typically, the surface layer is very dark brown and very dark grayish brown cobbly clay loam about 7 inches thick. The next layer is very dark grayish brown cobbly clay loam about 5 inches thick. The subsoil is brown clay about 18 inches thick. Weathered bedrock is at a depth of about 30 inches. The depth to bedrock ranges from 20 to 40 inches. In some areas the surface layer is stony.

Permeability is very slow in the Medco soil. Available water capacity is about 4 inches. The effective rooting depth is limited by a dense layer of clay at a depth of 6 to 18 inches. Runoff is medium on slopes less than 35 percent and rapid on slopes over 35 percent. The hazard of water erosion is moderate on slopes less than 35 percent and high on slopes over 35 percent. The water table, which is perched above the layer of clay, is at a depth of 0.5 to 1.5 feet from December through March.

3.5 *Wildlife*

The larger landscape in which the allotments are located, provide habitat for approximately 200 terrestrial wildlife species that are known or suspected to occur in the area.

Species are recognized as "special status" if they are federally listed as Threatened or Endangered, proposed or a candidate for federal listing as Threatened or Endangered, if they are Northwest Forest Plan Survey and Manage Species or if they are a BLM sensitive or assessment species. BLM Oregon State Office policy is to protect, manage, and conserve these species and their habitat such that any Bureau action will not contribute to the need to list any of these species (USDI BLM 2003).

3.5.1 *Threatened and Endangered Species*

Northern spotted owl (<i>Strix occidentalis</i>)	FT
Bald Eagle (<i>Haliaeetus leucocephalus</i>)	FT

FT – Federal Threatened

Northern Spotted Owl (*Strix occidentalis caurina*)

The northern spotted owl is federally listed as a threatened species. There are no known northern spotted owl nests within or adjacent to the allotments covered in this EA.

Bald Eagle (*Haliaeetus leucocephalus*)

The bald eagle is federally listed as a threatened species. Bald eagles are present in the area. There is an active nest nearby (Lake Creek nest) and winter roosting has been observed on the Yankee Creek Reservoir allotment and the adjacent private land in the Yankee Creek Reservoir area. There are no known bald eagle nests on the allotments.

3.5.2 Northwest Forest Plan Survey and Manage Species

Species	Status
Great gray owl (<i>Strix nebulosa</i>)	S&M
Chase sideband snail (<i>Monadenia chaceana</i>)	S&M
Evening fieldslug (<i>Deroceras hesperium</i>)	S&M

S&M - Northwest Forest Plan Survey and Manage

3.5.3 Other Special Status Species

Species	Status
Northwestern pond turtle (<i>Clemmys marmorata marmorata</i>)	BSO
Foothill Yellow-legged frog (<i>Rana boylei</i>)	BA
Lewis' woodpecker (<i>Melanerpes lewis</i>) (KM, WC)	BSO

BSO - Bureau Sensitive Oregon

BA – Bureau Assessment

3.5.4 Big Game Winter Range Area

All allotments covered under this EA are within an area designated by the Medford RMP as Big Game Winter Range Area for deer and elk. The Little Butte Creek Watershed Analysis (USDA Forest Service and USDI BLM 1997) indicated that this designation is meant to identify areas to promote forage, hiding, and thermal cover for deer and elk. General dates for the use of the area for deer and elk winter range is Oct. 1st - April 30th (ODFW 2002). In addition to the winter months, the allotments are within important deer and elk habitat areas used throughout the year.

Hiding and thermal cover for summer and winter seasonal conditions are currently met through existing late-successional forest stands, oak woodlands, and brush fields present in the allotment areas. Both winter and summer thermal cover generally has canopy closure values in excess of 60 percent. The high canopy closure moderates microclimatic extremes, and can benefit deer and elk by reducing the energy required to maintain body temperatures.

Hiding cover is also important to deer and elk because it provides areas for escaping predators and avoiding disturbances caused by other mechanisms, such as vehicular traffic. Paradoxically, fire suppression has reduced forage condition (vigor) and to a minor extent, quantity due to brush replacement, but this has generally improved hiding cover conditions in the watershed. In the absence of fire, shrubs and trees that provide hiding cover have become denser.

High quality forage is very important to both deer and elk, especially on winter ranges. Forage conditions are declining in the watershed due to overgrazing, noxious weed

proliferation, and fire suppression. Introduced noxious herbaceous species, such as yellow starthistle and medusa, are displacing native grasses and herbs which generally provide high quality, more nutritious forage. Also, due primarily to fire suppression, large acreage of important browse species such as wedgeleaf ceanothus have become decadent and are not providing the quality forage that younger plants provide.

4. Environmental Consequences

This chapter describes the estimated impacts to the environment, should the Proposed Action or an alternative be implemented. The discussions relate directly to the objectives and issues discussed in the previous sections. This is the scientific and analytic basis for comparisons between alternatives.

4.1 Riparian Areas and Aquatic Resources

4.1.1 Water Quality

4.1.1.1 Effects of Alternatives 1, 2, and 3 on Water Quality

Grazing animals were identified as a potential contaminant source within the source water areas for Gold Hill, Rogue River, and Grants Pass drinking water protection areas in the source water assessments completed by DEQ and the Oregon Department of Human Services (2003). The four allotments are within the source water areas for the Medford Water Commission and the cities of Gold Hill, Rogue River and Grants Pass; however, given the numbers of cattle grazed on these allotments is low and the grazing seasons are short, it is unlikely that these allotments grazed as prescribed under these alternatives are significant contributors to the identification of grazing as a potential contaminant source. In general, the source water areas are dominated by private agricultural (including grazing) and residential lands.

Antelope and Little Butte Creeks are listed as water quality limited for temperature (summer) and *E.coli* (fall/winter/spring/summer) on the ODEQ's 303(d) List (2004/2006). Little Butte Creek is also listed for dissolved oxygen, fecal coliform, and sedimentation. All of the tributaries within the Antelope Road Allotment flow into Antelope Creek and the tributaries in the northern portion of the canal allotment flow into Little Butte Creek, but enter an irrigation canal prior to entering Little Butte Creek.

It is unlikely that livestock grazing on these allotments significantly contribute to the water quality listings for Antelope and Little Butte Creeks. Cattle are prevented from accessing Antelope Creek by allotment boundary fences and by County Road 867 (Antelope Creek Road). The number of cattle authorized to graze the Antelope Road and Canal allotments is relatively low and the seasons-of-use are short. The intermittent streams in these allotments contain rocky substrate are not typically flowing by the beginning of the grazing season. Therefore, it is unlikely that cattle could contribute a significant amount of sediment or excrement that would be washed into Antelope and Little Butte Creeks. The dry streams would only contribute cool groundwater to downstream during the summer. Any grazing of riparian vegetation from cattle would not increase groundwater temperatures or affect the water quality limited temperature listings downstream.

4.1.1.2 Effects of Alternative 4 on Water Quality

The elimination of grazing on these four allotments would not change the identification of grazing as a potential contaminant in the source water areas for the Medford Water Commission and the cities of Gold Hill, Rogue River, and Grants Pass, nor would it change the water quality limited listings for Antelope and Little Butte Creeks.

4.1.2 Riparian Conditions (Issue 1)

4.1.2.1 Effects of Alternative 1 (No Change/Proposed Action) on Riparian Conditions

4.1.2.1.1 Antelope Road Allotment

Long-term consequences of continued grazing at current levels would mean the “hot spots” identified along the lower sections of the west side intermittent tributaries would continue to be devoid of vegetation where the cows hang out (along the property line). Cows would continue to cross the intermittent tributaries which could potentially contribute small amounts of sediment to these intermittent channels; however, these channels are very rocky so sediment input is expected to be negligible. Any sediment disturbance associated with cows walking through a wet or dry stream channel would be minimal and not carried beyond the site level. The rocky channel provides roughness that allows most of the fine sediment to settle out before reaching Antelope Creek and at that point any remaining fines would be entrained and carried downstream. The amount of sediment contributed to the system as a result of grazing would be immeasurable and insignificant. The two perennial springs would continue to be grazed at the current level of use and would continue to be FAR resulting in compromise of fragile soils. Under this alternative, impacts to fragile soils would continue to compromise the soil’s ability to retain moisture.

Fuels reduction treatment recently implemented in the northern section of this allotment may lead to a more even distribution of cattle throughout the allotment. This action may reduce the amount of time cows spend hanging around the property boundary in the southern section of the allotment. It is possible that having cows more evenly distributed throughout the allotment may encourage greater use of the spring areas. The BLM will be monitoring cattle use in the Antelope Road Allotment in order to ensure that cattle are moving throughout the allotment and not concentrating in fragile areas.

4.1.2.1.2 Brownsboro Allotment

No change to the intermittent stream systems in this allotment is expected with implementation of this alternative due to the rocky stream substrate, limited water, and limited riparian vegetation.

4.1.2.1.3 Canal Allotment

The wet area at the top of an intermittent stream in Section 17 and the two long-duration seeps in Section 21 identified as “hot spots” would continue to be grazed, limiting the productivity of riparian vegetation. Soil disturbance and churning and compaction from cattle loitering in these areas would continue, threatening the water holding capacity of these ecosystems.

4.1.2.1.4 Yankee Reservoir Allotment

No change to the intermittent stream systems in this allotment is expected with the implementation of this alternative due to the rocky stream substrate, limited water, and limited riparian vegetation.

4.1.2.2 Effects of Alternative 2 on Riparian Conditions

4.1.2.2.1 Antelope Road Allotment

This alternative changes the season-of-use for the Antelope Road Allotment from April 16th-May 30th to May 1st-June 30th. The consequences of changing season-of-use are unknown at this time. Uplands in this area tend to dry out early in the season and similarly the intermittent streams dry up soon after the spring rains end. Changing the season-of-use may increase pressure on the already limited riparian vegetation and the two wet areas in this allotment. It is also possible that a later season-of-use will allow more of the soils to dry out before the grazing season starts which would minimize soil disturbance. Monitoring would occur over the next three years to determine if the change to the season-of-use should continue.

Additionally, the brush thinning project recently implemented to reduce fire hazard in the wildland-urban interface may encourage cattle distribution in areas previously inaccessible. Better distribution of cows will relieve some of the pressure on the lower section of the allotment, especially along the property boundary where cows currently congregate.

4.1.2.2.2 Brownsboro Allotment

No impact to the intermittent stream systems in this allotment is expected with the implementation of Alternative 2 due to the rocky stream substrate, limited water, and limited riparian vegetation.

4.1.2.2.3 Canal Allotment

Riparian fencing will improve conditions of the three wet areas that have a direct effect on the Canal Allotment by removing cows from wet areas where trampling and grazing of riparian vegetation have been observed. The wet area at the top of an intermittent stream in Section 17 and the two long-duration seeps in Section 21 are fragile

ecosystems that are a rare occurrence in this landscape. This alternative protects those features by enclosing those areas with fence.

4.1.2.2.4 Yankee Reservoir Allotment

This alternative is not expected to impact to the intermittent stream systems in this allotment due to rocky stream substrate, limited water, and limited riparian vegetation.

4.1.2.3 Effects of Alternative 3 on Riparian Conditions

Overall, the rest rotation and staggered grazing systems proposed in this alternative would lead to improved riparian conditions especially at the “hot spots.” By initially removing cows from the allotments for 3-5 years, riparian areas would have a chance to “recover.” In general, this would mean increases in streamside vegetation and reduced soil disturbance, especially at the “hot spots.” Where grazing in Riparian Reserves has occurred, vegetation conditions would improve during the non-grazing years. Effects of the re-introduced of grazing under a “rest-rotation” schedule would be less than the current levels.

Changes to the current grazing system that were proposed and analyzed in Alternative 2 also apply to this alternative.

4.1.2.3.1 Antelope Road Allotment

Historic “hot spots” where livestock congregate every year often exhibit soil compaction and hoof prints in areas of high soil moisture where it can be especially detrimental. This system would allow more time for soils to recover after a season of grazing. This recovery would also include increased riparian species where water is available and increased vigor of streamside vegetation.

4.1.2.3.2 Brownsboro Allotment

Implementation of this alternative would not change the conditions along the intermittent stream systems within this allotment due to the rocky stream substrate, limited water, and limited riparian vegetation.

4.1.2.3.3 Canal Allotment

Historic “hot spots” where livestock congregate every year often exhibit soil compaction and hoof prints in areas of high soil moisture where it can be especially detrimental. This system would allow more time for soils to recover after a season of grazing, possibly reducing the need for riparian fences. This recovery could include increased riparian species in some areas and increased vigor of streamside vegetation.

4.1.2.3.4 Yankee Reservoir Allotment

Implementation of this alternative would not change conditions along the intermittent stream systems in this allotment because of rocky stream substrate, limited water, and limited riparian vegetation.

4.1.2.4 Effects of Alternative 4 (No Grazing) on Riparian Conditions

4.1.2.4.1 Antelope Road Allotment

With the elimination of grazing, streamside vegetation would thrive (especially in the lower sections of the stream reaches). Vegetation may re-colonize in the areas that are currently devoid of herbaceous and woody vegetation. Increases in riparian vegetation where there is sufficient water to support these species would be expected. This increase in vegetation would not reduce stream temperatures in Antelope Creek. Over time, hoof impacts along the streams and at the springs would heal over. Since the intermittent stream channels are mostly rocky, fine sediment generated by hoof impacts in watering and crossing areas are not measurable at the site scale or greater watershed scales. Therefore, removing cows from this allotment would not change the sediment regime. The water holding capacity of seeps and springs would improve as soils recover from compaction and trampling.

The fuels reduction treatment that was recently implemented is not expected to affect aquatic resources as riparian buffers were included in the project design. Residential development and associated recreational activities (OHV use) directly upstream of this allotment is expected to continue negatively affecting these stream channels. Within the level 6 subwatershed, continued grazing, agriculture, and residential development outside this allotment will continue to negatively affect Antelope Creek.

4.1.2.4.2 Brownsboro Allotment

Removing cows from this allotment would have no impact to riparian systems and would not reduce stream temperatures in Little Butte Creek.

4.1.2.4.3 Canal Allotment

Removing cows from the areas identified by the hydrology surveys as “hot spots” would allow riparian vegetation to thrive in the wet meadow areas. Soil disturbance and churning associated with cattle use in these areas would heal over time, protecting the water holding capacity of these small ecosystems. Increases in riparian vegetation where there is sufficient water to support these species would be expected. This increase in vegetation would not reduce stream temperatures in Little Butte Creek.

4.1.2.4.4 Yankee Reservoir Allotment

Removing cows from this allotment would have no impact to riparian systems.

4.1.3 Aquatic Conservation Strategy

The Aquatic Conservation Strategy of the Northwest Forest Plan (and incorporated by the 1995 Medford District RMP) was developed to restore and maintain the ecological health of watersheds and aquatic systems on public lands. The Aquatic Conservation Strategy includes four components, they are: riparian reserves, watershed analysis, key watersheds and watershed restoration (NWFP p. B-12). The Northwest Forest Plan also identifies nine objectives for meeting the intent of the Aquatic Conservation Strategy (NWFP p. B-11). These objectives, along with watershed analysis, provide the context for agency review of proposed actions for determining whether a proposed action “meets” or “does not prevent attainment” of the Aquatic Conservation Strategy Objectives. Standards and guidelines specific to the four components listed above are included in the NWFP (p. C-3, C-7, and C-30 to C-38) and the Medford District RMP (RMP p. 22-23 and 26-32). The standards and guidelines are designed to ensure project compatibility with the Aquatic Conservation Strategy Objectives. The Aquatic Conservation Strategy focuses on the maintenance and restoration of ecosystem health at the watershed and landscape scales as opposed to individual projects or small watersheds (NWFP p. B-9 to B-10).

4.1.3.1 Aquatic Conservation Strategy Objectives

The ACS objectives guide BLM’s management of riparian reserves. None of the alternatives prevent attainment of any of ACS objectives beyond the level 7 drainage (HUC 7) scale. Alternative 4 (No Grazing) best addresses the restoration of riparian habitat by eliminating impacts at the site and level 7 scales.

The objectives and the effects of implementing any of the alternatives at the site level, level 7 drainage (HUC 7), level 6 subwatershed (HUC 6), and level 5 watershed (HUC 5) are discussed below. This analysis holds true for both Alternative 2 and 3.

Objective 1: Maintain and restore the distribution, diversity, and complexity of watershed and landscape-scale features to ensure protection of the aquatic systems to which species, populations, and communities are uniquely adapted.

Site level: No effects at this spatial scale.

HUC 7 level: No effects at this spatial scale.

HUC 6 level: No effects at this spatial scale.

HUC 5 level: No effects at this spatial scale.

Objective 2: Maintain and restore spatial and temporal connectivity within and between watersheds. Lateral, longitudinal, and drainage network connections include floodplains, wetlands, upslope areas, headwater tributaries, and intact refugia. These network connections must provide chemically and physically unobstructed routes to areas critical for fulfilling life history requirements of aquatic and riparian-dependent species.

Site level: There are no physical or chemical barriers to aquatic connectivity associated with the proposed livestock grazing.

HUC 7 level: No effects at this spatial scale.

HUC 6 level: No effects at this spatial scale.

HUC 5 level: No effects at this spatial scale.

Objective 3: Maintain and restore the physical integrity of the aquatic system, including shorelines, banks, and bottom configurations.

Site level: The rocky substrate common in most of the stream channels provides protection from hoof damage caused by cows walking in the channels. Banks do not appear to be sloughing or eroding as a result of cattle grazing in these allotments. Cattle would continue to impact seeps and springs, where the soils are more susceptible to degradation. Fencing in Alternatives 2 and 3 will allow recovery of the physical integrity of these spring/seep areas.

HUC 7 level: No effects at this spatial scale.

HUC 6 level: No effects at this spatial scale.

HUC 5 level: No effects at this spatial scale.

Objective 4: Maintain and restore water quality necessary to support healthy riparian, aquatic, and wetland ecosystems. Water quality must remain within the range that maintains the biological, physical, and chemical integrity of the system and benefits survival, growth, reproduction, and migration of individuals composing aquatic and riparian communities.

Site level: Water quality in these allotments is sufficient to support healthy riparian, aquatic, and wetland ecosystems. Sediment generated by cattle crossing streams is very small because most of the channels are rocky and many of the channels are dry during the season of use. As such, the amount of grazing permitted in these allotments generates sediment levels within the range of natural variability. Sediment generated by cattle walking through spring and seeps is probably not transported off-site because it occurs at the beginning of the dry season when flow levels are low. Shade and bank stability are compromised by grazing of riparian vegetation. Grazing has reduced riparian vegetation at

some sites within these allotments but it is not common and is not impacting temperatures because the level of use is so low and much of it takes place on intermittent stream channels.

HUC 7 level: No effects at this spatial scale.

HUC 6 level: No effects at this spatial scale.

HUC 5 level: No effects at this spatial scale.

Objective 5: Maintain and restore the sediment regime under which aquatic ecosystems evolved. Elements of the sediment regime include the timing, volume, rate, and character of sediment input, storage, and transport.

Site level: There is a small amount of fine sediment entering stream channels where livestock cross streams; however, these are intermittent tributaries and the season of use typically starts after the stream has dried up. This sediment would be transported down stream during winter high flows when natural turbidity levels are high. Cows are usually not walking through the stream channels with flowing water. This small amount of fine sediment is not outside the range of natural variability during winter high flows and is expected to settle out before reaching perennial streams. The proposed grazing would not affect the sediment regime under which aquatic ecosystems evolved. Grazing would maintain seeps and springs in their current condition.

HUC 7 level: No effects at this spatial scale.

HUC 6 level: No effects at this spatial scale.

HUC 5 level: No effects at this spatial scale.

Objective 6: Maintain and restore in-stream flows sufficient to create and sustain riparian, aquatic, and wetland habitats and to retain patterns of sediment, nutrient, and wood routing. The timing, magnitude, duration, and spatial distribution of peak, high, and low flows must be protected.

Site level: There could be a small amount of compaction occurring along the northern border of the Antelope Creek Allotment, but it is not expected to affect peak flows or duration of floodplain inundation. Current use levels would maintain at-risk spring/seep/wetland conditions. Proposed wet meadow fences (Alternatives 2 and 3) would maintain the water table at current levels and over time improvements may occur.

HUC 7 level: No effects at this spatial scale.

HUC 6 level: No effects at this spatial scale.

HUC 5 level: No effects at this spatial scale.

Objective 7: Maintain and restore the timing, variability, and duration of floodplain inundation and water table elevation in meadows and wetlands.

Site level: There could be a small amount of compaction occurring along the northern border of the Antelope Creek Allotment, but it is not expected to affect peak flows or duration of floodplain inundation. Current use levels would maintain at-risk spring/seep/wetland conditions. Proposed wet meadow fences (Alternatives 2 and 3) would maintain the water table at current levels and over time improvements may occur.

HUC 7 level: No effects at this spatial scale.

HUC 6 level: No effects at this spatial scale.

HUC 5 level: No effects at this spatial scale.

Objective 8: Maintain and restore the species composition and structural diversity of plant communities in riparian areas and wetlands to provide adequate summer and winter thermal regulation, nutrient filtering, appropriate rates of surface erosion, bank erosion, and channel migration and to supply amounts and distributions of coarse woody debris sufficient to sustain physical complexity and stability.

Site level: In lower Antelope Creek, where cows congregate along the property line there is very little vegetation (riparian or otherwise). This area is small and it does not reflect the condition of riparian areas throughout this allotment.

HUC 7 level: The “hot spots” identified on BLM allotments are not enough to degrade conditions at this scale. Conditions of riparian areas outside the “hot spots” are stable and contributing to the overall improving state of this watershed.

HUC 6 level: No effects at this spatial scale.

HUC 5 level: No effects at this spatial scale.

Objective 9: Maintain and restore habitat to support well-distributed populations of native plant, invertebrate and vertebrate riparian-dependent species.

Site level: Livestock grazing would continue to have limited impacts on habitat for aquatic and terrestrial riparian species. Riparian dependent aquatic organisms use intermittent tributaries at various times of the year. Season of use is such that cows are accessing the creeks after they dry up for the season and this would greatly reduce the number of organisms that could be affected. Overall, aquatic habitat across the allotments is in fair condition, often in an upward trend or properly functioning condition.

HUC 7 level: No effects at this spatial scale.

HUC 6 level: No effects at this spatial scale.

HUC 5 level: No effects at this spatial scale.

4.1.3.2 Riparian Reserves

There are three standards and guidelines for grazing management in riparian reserves (ROD 1994, C-33, 34). These are intended to regulate livestock activities that prevent or retard attainment of ACS objectives.

GM-1: Adjust grazing practices to eliminate impacts that retard or prevent attainment of ACS objectives. If adjusting practices is not effective, eliminate grazing.

Livestock grazing impacts streambank stability, sediment regimes, wetland integrity, as well as the composition and diversity of native riparian flora. Fencing the wet areas and seeps (Alternatives 2 and 3) will protect these riparian reserves from further soil compaction and grazing of riparian vegetation.

Grazing practices will be adjusted by implementing guidelines for restricting and monitoring livestock use in riparian reserves of the intermittent streams and wetlands within these allotments to meet ACS objectives.

GM-2: Locate new livestock handling and/or management facilities outside riparian reserves. For existing livestock handling facilities inside riparian reserves, ensure that ACS objectives are met. Where objectives cannot be met, require relocation or removal of such facilities.

No new livestock facilities are being planned within riparian reserves. There are no authorized water developments within riparian reserves on these allotments. An unauthorized “push-up” dam was constructed on an intermittent stream within the Yankee Reservoir Allotment (discovered by the BLM in 2003). The removal and restoration of the impacted area will be handled administratively through the terms and conditions of the current lease.

GM-3: Limit livestock trailing, bedding, watering, loading, and other handling efforts to those areas and times that will ensure ACS objectives are met.

Livestock activities in riparian reserves will be regulated by implementing guidelines for restricting use, monitoring use, and taking corrective action. Timing the season-

of-use by allowing turn out based on range readiness is also intended to meet ACS objectives.

4.1.3.3 Key Watersheds

None of the four allotments lie within key watersheds identified in the Northwest Forest Plan. However, the allotments are located downstream of the North and South Forks Little Butte Creek Key Watershed.

4.1.3.4 Watershed Analysis

All four allotments are within the Little Butte Creek watershed. The Little Butte Creek Watershed Analysis was completed in 1997. The recommendations related to grazing within this watershed are discussed in Section 3.1.1 of this document.

4.1.3.5 Watershed Restoration

Watershed-level restoration is discussed in the Little Butte Creek Watershed Analysis (1997). Fuels reduction treatments recently took place on approximately 85 acres of public lands and 25 acres of private lands manually clearing brush from within the Antelope Road Allotment. Overall, there has been very little active restoration in the project area.

4.1.4 Fisheries

4.1.4.1 Threatened and Endangered Aquatic Species and Essential Fish Habitat

This project is determined to be a “No Effect (NE)” for listed coho salmon, their Critical Habitat, and Essential Fish Habitat. The Antelope Road Allotment (200 acres of public lands) is approximately four miles upstream from the extent of the coho salmon fish distribution in Antelope Creek. This allotment authorized 13 cow/calf pairs to graze annually for 1.5 months under Alternatives 1 and 2, and for 21 days under Alternative 3. Cattle are prevented from accessing Antelope Creek by allotment boundary fences. Intermittent tributaries run through this allotment, then through private agricultural land for 600-1,000 feet before entering into Antelope Creek which supports populations of coho salmon at least 3.5 miles downstream of the allotment boundary. Any sediment generated by cattle walking across the rocky intermittent stream channels would settle out in the private land downstream of the allotment, before reaching Antelope Creek or would be entrained and pass-through the system on its way to the ocean.

4.1.4.1.1 Effects of Alternative 1 (No Change/Proposed Action) on Fisheries

The No Change/Proposed Action would have no effect on federally listed threatened coho salmon populations in Antelope Creek or Little Butte Creek. The streams in these allotments are intermittent and riparian vegetation is mostly limited by water availability. Throughout these allotments, streamside vegetation is not significantly affected, although there are “hot spots” where cows access the stream channels and graze the vegetation. Even though the “hot spot” activity is having some localized effect on plants and wetland habitat, it is not of a magnitude large enough to affect groundwater temperatures or sediment routing in a way that could affect downstream coho or coho Critical Habitat (CCH).

4.1.4.1.2 Effects of Alternative 2 and 3 on Fisheries

Under this alternative, there are no effects to federally listed threatened coho salmon populations or other fish populations in Antelope Creek and Little Butte Creek . Overall, the rest-rotation and staggered grazing systems proposed in this alternative would lead to improved riparian conditions at the site scale. The riparian fencing on the Canal Allotment does not affect the federally listed threatened coho salmon populations or their habitat in the Upper Antelope Creek and Lower Little Butte Creek level 6 subwatersheds.

4.1.4.1.3 Effects of Alternative 4 (No Grazing) on Fisheries

Under this alternative, there are no effects to federally listed threatened coho salmon populations in the Upper Antelope Creek and Lower Little Butte Creek level 6 subwatersheds. There are several “hot spots” where cows access the stream channels and graze the vegetation. Removing cows from these allotments would allow these “hot spots” to recover: streamside vegetation would grow more vigorously and soil disturbance would be reduced.

4.2 Botany (Issues 2, 3, and 4)

4.2.1 Effects of Alternative 1 (No Change/Proposed Action) on

Botany

Continued grazing under the current system would directly contribute to species composition changes and vegetation structure changes. Site disturbance would continue to produce conditions favoring noxious weeds and invasive introduced species. Livestock would continue to spread weed seed that passes through their bodies or becomes stuck on their hair and hooves. The level at which livestock grazing on these four allotments occurs would not significantly change the composition, structure, and rate of weed spread. These weedy species would continue to spread or maintain their current levels. Although no weed treatments have been done in these allotments in recent years, the BLM weed control program uses herbicides, biological control agents,

and hand pulling to treat infestations across the landscape as time, budget, and personnel constraints allow. Grazing by livestock can be used as a method to control the spread of noxious weeds. The early season of use that occurs on these allotments allows livestock to graze invasive species such as annual grasses and yellow starthistle before they set seed and become unpalatable.

Wet areas on the Canal Allotment would continue to be utilized. Herbivory of and damage to the wetland vegetation, hydrologic cycle, and soil structure due to trampling and churning in the area would continue.

Direct damage to *Ranunculus austro-oreganus* would occur through, trampling, and burying under cattle feces. Death and harm would occur to individuals. Continued grazing at the current level does not pose a threat to the persistence of the Bureau Sensitive plant *Ranunculus austro-oreganus* and loss of some individuals would not contribute to the need to list this species.

Plant community health would slowly decline or persist in a degraded state in areas dominated by annual grass. This would provide degraded suitable habitat for *Ranunculus austro-oreganus*. This species is tolerant of moderate disturbance but the health of these populations along with the health of the habitat would continue to decline due to shrub encroachment and grazing.

Areas within these allotments that are overly dense due to fire suppression and livestock grazing would be susceptible to intense stand replacement fires. While this may be a natural process in chaparral communities, it is not natural in other plant communities in the project area and it would open the area to weed invasions. Rare plant populations and uncommon oak woodland communities could be lost.

Noxious weeds and introduced plants would continue to spread and establish throughout the area, particularly roadsides and open areas. Invasive weed species populations would increase without active management. Noxious weed and introduced plant populations would contribute to fire risk.

Historical overgrazing has had an adverse effect on the condition of the natural plant community. Dominance of grass and forb communities by noxious weeds and invasive introduced species is a result of introduction of nonnative plants coupled with years of overgrazing by livestock. These introduced species are superior competitors for available resources thereby displacing and excluding native plants. The current grazing is having little effect on the allotments botanical condition. Continuing the current grazing system would hinder restoration of the plant communities and may cause further degradation in localized areas.

Loss of oak woodland habitat would continue on private land. Oak woodlands are found transitionally between the river bottoms and the conifer forest uplands. This location on the landscape is commonly used for urban development. Publicly managed oak woodlands could become some of the last remaining in the ecoregion.

These four allotments are a small part of the grazing landscape but they do contribute to the overall poor condition of the natural habitat. Generally, these allotments (BLM managed portions) are in better condition than the private rangelands. Currently, the largest contributor to livestock grazing effects in this area is private enterprise. This situation is expected to endure for the foreseeable future.

4.2.2 Effects of Alternative 2 on Botany

Effects would be similar to Alternative 1. Continuing to allow similar grazing levels, would not adequately provide for site restoration. Grazing levels similar to Alternative 1 would provide conditions favoring weed spread and establishment.

Wetland areas would be protected by fencing. Botanical conditions in these fenced areas would be expected to recover within 2-5 years. The percent bare ground in these fenced areas would decrease with the reduced disturbance from hoof impact. The water would change from flowing on the surface to flowing sub-surface. This may result in a conversion of some wetland species to upland species; this would not be a significant change.

Natural plant communities, including rare plant habitat, would continue to degrade due mainly to private land uses and continued spread of non-native species.

4.2.3 Effects of Alternative 3 on Botany

All allotments would be leased with a reduced level of grazing. The reductions would be achieved through a decrease in the length of season, incorporating a rest year, or both. Additionally, the Antelope Road Allotment would have a grazing season that is staggered annually to reduce the grazing pressure on a particular suite of plants.

Noxious weed treatments would concentrate on targeted high priority sites. Prioritizing and treating weed sites would remove and reduce populations with the greatest potential to affect ecosystem health. With the change of grazing system, some level of long-term effectiveness would be expected.

Plant community structure restoration would advance through fuels hazard reduction treatments. Resultant disturbed ground would be seeded and treated for weeds to prevent newly established populations.

Direct damage to *Ranunculus austro-oreganus* would occur through herbivory, trampling (cattle and human), and burying under cattle feces but at a lower level than Alternative 1 due to the reduced level of grazing. Death and harm would occur to individuals. Loss of some individuals would not contribute to the need to list this species.

Through reduced grazing and restoration of rare plant habitat, *Ranunculus austro-oreganus* populations would increase in size and density.

Wetland areas would be protected by fencing. Botanical conditions and ecological processes in these fenced areas would be expected to recover within 2-5 years. The percent bare ground in these fenced areas would decrease with the reduced disturbance from hoof impact and grazing. The water would change from flowing on the surface to flowing sub-surface. This may result in a conversion of some wetland species to upland species but this would not be a significant change.

Plant community structure and composition restoration is expected to produce slow but lasting results, moving toward a stable native community due to the mitigation measures and the reduced level of grazing. The plant community would improve to a slight departure from the ecological reference condition. Rest periods will allow native plants (seeded, planted, or naturally occurring) an opportunity to become established.

Although these publicly managed lands are small parcels among highly modified private lands, they would serve as a seed source for native plant species. Conversely the privately owned lands would contribute seed for weedy species which can out compete native species.

Noxious weed and fuels treatments would contribute to a desired pre-Euro-American settlement condition. Fuel loadings and stand structure would be less likely to produce high intensity, stand replacing fires.

Restoration of publicly managed rangeland would continue. Natural plant communities, including rare plant habitat, would increase. Noxious weed and introduced plant populations would decrease.

Private rangeland use would continue. Oak woodland habitat would continue to be converted for human uses or its condition would deteriorate. Noxious weed and introduced plant populations may not be treated and could increase by invading additional disturbed ground.

4.2.4 Effects of Alternative 4 (No Grazing) on Botany

This alternative would not have any direct effects on botanical resources in the project area. Ending grazing on these allotments would allow plant community restoration to occur, at a slightly faster rate than would occur with the current grazing use. In areas where there is a slight to moderate departure from the ecological reference condition, it is expected that positive effects to the plant community composition and structure would be visible within 3-10 years depending on climate conditions. In areas exhibiting a dramatic departure from the ecological reference condition, it is likely that no visible benefits from removing livestock grazing would occur. Livestock do not use these areas except for movement corridors as there is no suitable forage. Furthermore, in expansive areas of non-native grasses, there would be little to no seed source for the recruitment of native perennial grasses remaining.

The current fire suppression policy would maintain conditions that favor plant community structure and composition changes. Plant community health would slowly

decline or persist in a degraded state in areas dominated by annual grass. This would provide degraded suitable habitat for *Ranunculus austro-oreganus*. This species is tolerant of moderate disturbance but the health of these populations would continue to decline along with the health of the habitat.

Areas within these allotments that are overly dense due to fire suppression and livestock grazing would be susceptible to intense stand replacement fires. While this may be a natural process in chaparral communities, it is not natural in other plant communities in the project area and it would open the area to weed invasions. Rare plant populations and uncommon oak woodland communities could be lost.

Riparian vegetation would expand without the annual herbivory and physical trampling. In this general area, much of the livestock grazing occurs on private lands. Historical overgrazing has had an adverse effect on the condition of the natural plant community. Dominance of the grass and forb layer by noxious weeds and invasive introduced species is a result of introduction of non-native species coupled with years of overgrazing by livestock. These introduced species are superior competitors for available resources thereby displacing and excluding native plants. In the watershed, natural plant communities, including rare plant habitat, would continue to degrade due mainly to private land use and condition.

Noxious weed and introduced plants would continue to spread and establish throughout the area, particularly roadside and open areas. Invasive weed species populations would increase without active management. Noxious weed and introduced plant populations would contribute to fire risk. Although no weed treatments have been done in this allotment in recent years, the BLM weed control program uses herbicides, biological control agents, and hand pulling to treat infestations across the landscape as time, budget, and personnel constraints allow.

Loss of oak woodland habitat would continue on private land. Oak woodlands are found transitionally between the river bottoms and the conifer forest uplands. This location on the landscape is commonly used for urban development. Publicly managed oak woodlands could become some of the last remaining in the ecoregion.

4.3 Soil Productivity

4.3.1 Effects of Alternative 1 (No Change/Proposed Action) on Soil Productivity

There would be no change from the current condition of the soil resource short-term, long-term, or cumulatively.

4.3.2 Effects of Alternative 2 on Soil Productivity

This alternative is slightly better at reducing impacts to soil productivity than Alternative 1. Fencing of the wet areas and seeps will eliminate impacts from livestock in these areas. This will locally reduce the risk of additional compaction, improve structure, and increase water-holding capacity of these soils in these fragile environments.

4.3.3 Effects of Alternative 3 on Soil Productivity

The 3-5 year rest period prescribed under this alternative would decrease opportunity for further soil compaction in the short-term. It would improve soil productivity long-term with the staggered season on Antelope Road Allotment and the rest-rotation prescribed for the other alternatives.

This alternative fences the same wet areas and seeps as in Alternative 2 and therefore, would reduce the impacts to these areas in the same manner as Alternative 2. Under this alternative there would be a slight, short-term increase in soil erosion as a result of the prescribed burning treatments. Implementing active rehabilitation measures would result in a moderate positive cumulative affect on the soil resource.

4.3.4 Effects of Alternative 4 (No Grazing) on Soil Productivity

Relative to the other alternatives, this alternative provides the best opportunity to reduce or minimize the risk of additional soil compaction. The compaction occurring as a result of cattle grazing in the spring would not occur, resulting in positive short-term and long-term improvements as the soil recovers from past compaction.

This alternative would have a slight positive direct effect due to reduced erosion to the soil resource in the short-term as more vegetation would be left on site. Not grazing these areas would increase vegetation, which would most likely increase the litter layer and soil organic matter. This could improve the nutrient cycling particularly if more preferred perennial grasses and forbs were re-established. Soil structure would likely recover quicker under this alternative.

4.4 Wildlife

4.4.1 Effects to Wildlife Common to All the Action Alternatives

Some of the special status species present in the allotment area could be directly or indirectly adversely affected by poor grazing practices and overutilization. Proper livestock grazing management can help to maintain natural ecosystems and sensitive habitats such as meadows and riparian areas, which would be disturbed by poor grazing practices.

4.4.1.1 Threatened and Endangered Species

Northern Spotted Owl

No disturbance or negative effects to northern spotted owl are expected from any of the proposed alternatives.

Bald Eagle

No disturbance or negative effects to bald eagles are expected from any of the proposed alternatives.

4.4.1.2 Northwest Forest Plan Survey and Manage Species

Great Gray Owl

No great gray owl nests are known to be within or adjacent to the allotment areas. Great gray owls could be affected indirectly through damage to meadows resulting in loss of habitat for prey species.

Terrestrial Molluscs

Poor grazing practices and overutilization could directly or indirectly adversely affect terrestrial mollusc species. Examples include changes to vegetation affecting shade and moisture, trampling, and disturbance of ground litter. Grazing that occurs when the soil is moist has the greatest likelihood of detrimental effect due to increased soil impacts, and likelihood of mechanical damage to active molluscs in spring and fall.

4.4.1.3 Additional Special Status Species

Northwestern Pond Turtle

Overgrazing in riparian areas could adversely affect this species by the trampling and grazing of aquatic vegetation as well as disturbance.

Foothill yellow-legged frog

Frog species are vulnerable to impacts from disturbance of wetland breeding habitats, egg mass damage, and reduction/disturbance of wetland vegetation. Overgrazing in riparian areas could adversely affect this species by the trampling and grazing of aquatic vegetation as well as disturbance.

4.4.1.4 Other Wildlife Species Affected by Livestock Grazing

Livestock grazing has the potential to indirectly impact wildlife by changing vegetation composition, structure, and function. Livestock operations result in a reduction of forage available to native herbivores (e.g. deer and elk), as well as reductions in vegetative ground cover for ground nesting birds, burrowing rodents, and other wildlife

species dependent on ground cover for protection, food, and breeding sites. These effects would be especially prevalent in areas of overutilization by livestock. Proper livestock grazing management has helped to avoid impacts to these habitats which can be disturbed by overutilization and excessive hoof/soil impacts.

4.4.1.5 Big Game Winter Range Area

All allotments covered under this EA are within an area designated by the Medford RMP as a Big Game Winter Range Area for deer and elk. The Little Butte Creek Watershed Analysis (1997) indicated that this designation is meant to identify areas to promote forage, hiding, and thermal cover for deer and elk. General dates for the use of the area for deer and elk winter range is October 1st to April 30th (ODFW 2002). In addition to the winter months, the allotments are within important deer and elk habitat areas used throughout the year.

High quality forage is important to both deer and elk, especially on winter ranges. Several areas in the allotment have been identified as being heavily grazed. Most of these areas are associated with water/riparian zones where the grasses and forbs are more palatable and nutritious. The heavy utilization late into the grazing season (mid October) could result in inadequate regrowth by grasses and forbs. This regrowth (fall green-up) is important to deer and elk in building fat reserves that help sustain them during the winter season.

The potential lack of regrowth is exacerbated by the declining forage conditions throughout the allotment. Winter range forage conditions are deteriorating due to the encroachment of noxious grasses and forbs and the exclusion of fire from the mountain shrubland/chaparral plant community. Bristly dogtail and medusahead rye are common introduced species that are displacing native grasses and forbs. Compared to native species, these species are much less palatable and nutritious. Wedgeleaf ceanothus is the primary browse species for deer on the winter range. This shrub is generally regenerated by fire, but due to fire suppression, wedgeleaf has become decadent and forage quality has decreased.

Grazing has no discernible influence on the condition of shrubs/browse in the allotment. Appropriate livestock management, however, would help ensure that there is adequate grass and herbaceous forage for deer and elk on the winter range. This could be accomplished by controlling cattle use in the areas that are currently overutilized.

4.4.2 Effects to Wildlife from Implementing Specific Alternatives

4.4.2.1 Effects of Alternative 1 (No Change/Proposed Action) on Wildlife

These livestock grazing allotments are currently meeting the standards and guidelines for protection of habitat for terrestrial wildlife species (USDI BLM 1997). The plant communities on these allotments are diverse and support a variety of animal species

consistent with the surrounding soil, landscape and climate. Review of habitat conditions was accomplished through information gathered from BLM stream survey data and field review of sample areas within the allotments (USDI BLM 2002 and 2003). Stream surveys did note problem areas in the Antelope and Canal allotments, including locations of stream bank trampling and hoof/soil impacts in the lower reaches of intermittent streams. Static and degrading conditions were noted in the long duration seeps in Section 21 of the Canal allotment.

4.4.2.2 Effects of Alternative 2 on Wildlife

Alternative 2 would increase benefits to wildlife due to the addition of fencing sensitive wet areas and seeps in the Canal allotment. These areas were identified as locations of stream bank trampling, heavy use, and hoof/soil impacts when stream surveys were done in 2002 (USDI BLM 2002 and 2003). Fencing will provide better protection of habitat for wildlife species using those areas. Well maintained cattle exclosures will eliminate damage to these sensitive wet areas where cattle tend to congregate. Vegetation is expected to increase in height, providing increased cover for wildlife species such as molluscs, frogs, riparian nesting birds, deer and elk. Damage to these sensitive habitats from livestock trampling and hoof impacts will be eliminated in the protected areas. Forage could improve in amount and quality in the fenced areas. Fencing would improve water quality where cattle previously congregated in wet seeps.

Essential microhabitat includes moist to wet sites such as riparian areas, and near springs, seeps, wetlands, and mountain meadows. Components include uncompacted soil, litter, logs, and other woody debris in a site where the ground is shaded or otherwise protected from excessive fluctuations in temperature and humidity. Activities that compact soils or snow, disturb ground vegetation and/or litter, remove woody debris, alter temperature and/or humidity of the microsite, or alter the water table would be deleterious to the habitat of this species, including livestock grazing. There are few known locations, and inadvertent degradation of occupied sites, not yet known, would also be of concern. (USDA Forest Service and USDI BLM 1999).

The proposed change of grazing period on the Antelope Creek allotment from April 16th - May 30th to May 1st - June 15th would not be expected to result in a noticeable change of effects. A later turn out date when soils are drier may result in a reduction in hoof impacts.

No surveys for pond turtles have been done in the wet areas proposed for protection in Alternative 2. Because the areas are wet only in the early spring, they are not suitable pond turtle habitat.

4.4.2.3 Effects of Alternative 3 on Wildlife

This alternative would have potential positive effects for wildlife species. Livestock management would be directed at methods that would potentially improve forage and cover conditions for wildlife habitat, while not eliminating grazing. Management

techniques would be used to encourage native plant growth. In addition, fire would be used as a tool to reinvigorate decadent vegetation, as it would have done in its role as a natural disturbance in the ecosystem. Alternative 3 would provide opportunities to experiment with methods to improve conditions in order to enhance native plant species populations. This would improve forage and habitat available to many wildlife species.

Livestock management such as rest rotation and staggered season grazing would encourage plants to grow more than they would under same season, constant grazing pressure, especially in areas of high use such as riparian areas and springs. This would result in increased forage and improved habitat for species such as pond turtles, frogs, and birds. Riparian areas typically have more species richness than upslope areas, so there is the potential for benefits to many wildlife species.

Deer and Elk

Alternative 3 would be particularly beneficial to the improvement of forage condition on deer and elk winter range. Forage conditions are deteriorating due to the encroachment of unpalatable exotic grasses and forbs, fire exclusion from the oak woodland and brush vegetative communities, and livestock use, particularly on private land. Yellow star thistle, medusahead, and cheatgrass are some of the more common introduced species that are displacing native grasses and forbs. Native grasses are more nutritious than non-native annuals and compared to native species, these exotics produce poor deer forage. Fire exclusion has allowed wedgeleaf ceanothus (the browse species favored by wintering deer) to become decadent and of little forage value. Under natural conditions, fire regenerates wedgeleaf ceanothus. Due to intensive, largely successful fire suppression efforts, wedgeleaf has declined. Existing plants are old and decadent and forage quality and quantity have decreased dramatically. This alternative has the potential to improve these conditions.

Birds

Experimentation with rest-rotation grazing and staggered grazing seasons has the potential to be beneficial for bird species. Currently, the grazing periods on these allotments runs from April 1st through June 15th. This is the height of bird nesting season, so there is the greatest potential for impacts on bird nesting during the current seasons of use. Not grazing every spring or moving livestock grazing to another time of year would lessen the potential of disturbance to nesting birds from livestock grazing.

Rest rotation and staggered grazing seasons would be expected to result in increased riparian vegetation, which would offer more hiding cover and nesting habitat for certain species of birds. Any increases to native vegetation and overall ecosystem health would benefit associated wildlife habitat.

Northwestern pond turtle, Amphibians, Invertebrates

Rest rotation and staggered grazing seasons would potentially benefit these species. Both management tools have the potential to result in more streamside vegetation, and lessening occurrence of trampling of upslope nests and streamside habitat disturbance.

Improvements to native plant community health would have positive effects for these species habitats.

Mollusc species, especially those associated with riparian areas and other wet areas, would benefit through protection of these areas.

4.4.2.4 Effects of Alternative 4 (No Grazing) on Wildlife

This alternative would be expected to be more neutral or to benefit wildlife species in some areas. Vegetative succession would occur without impact from grazing, and wildlife populations and distributions would change in response to these habitat conditions. Areas impacted by higher utilization of livestock would recover and re-vegetate over time. However, many non-native grasses and noxious weeds would continue to out-compete native species and so vegetative conditions would not necessarily return to native plant communities.

This alternative has the potential to improve habitat conditions for some special status wildlife species. The possibility for livestock damage to riparian habitat from trampling and loss of vegetation would be removed to the potential benefit of the northwestern pond turtle and frog species. The great gray owl could benefit indirectly because trampling can result in a degradation of meadow habitat used by their prey species.

4.5 Cost Analysis

Allotment lessees pay \$1.56 per AUM based on a complex formula required by Congress (43 CFR 413.8-1(a)(1)) referred to as the federal grazing fee. For 2006, the federal grazing fee totaled \$152.88 for the four allotments combined. Although this dollar value is low, these allotments play an integral role with respect to operation and management of the current lessee's businesses and properties, and the potential lessees (neighbors) who would likely apply to use these allotments in the event the current lessee's gave up their authorizations.

To purchase replacement AUM's at the private pasture leasing rate, lessee's would have to pay \$13.00 per AUM, as established by the *2006 Average Private Non-Irrigated Grazing Fee Rate for Oregon* (USDA 2006). To pay for additional maintenance under a federal contract, labor costs were calculated using information from *the Davis Bacon Wage Act determination for the State of Oregon*, updated July 14, 2006. Respectively, the rates are \$1.56 per AUM for the federal grazing fee, \$13.00 per AUM in Oregon for the private non-irrigated grazing fee per AUM and \$32.12 per hour for a fence laborer under the Davis Bacon Wage Act.

4.5.1 Effects of Cost Values On All Action Alternatives

For lessees, public land grazing has both a social and economic benefit. The leases support grazing operator families, provide livestock forage and support the local

economy of Jackson County. The lands within the four allotments authorize 111 animals to graze 98 Animal Unit Months (AUMs) on 840 acres (See *Table 3. Alternative 1 ((No Action/Proposed Action))*). All of the authorized grazing takes place in the spring months, ending each year in June. According to the 2006 actual use records, full use (98 AUMs) was made on all the allotments.

Treatments intended to improve upland conditions not specifically defined in alternative descriptions will be analyzed under separate project plans with the appropriate level of environmental analysis and costs in the future. Examples of Ashland Resource Area Project may include Noxious Weed Treatments, Fuel Hazard Reductions, Prescribed Fires, Native Plant Seeding and Plantings, described in Section 2.5, above. When proposed, these types of projects will be implemented after adjustments to Cooperative Agreements or lease Terms and Conditions have taken place under the BLMs grazing regulations (43 CFR 4120.3-2 Cooperative Range Improvement Agreements or 43 CFR 4130.3 Terms and Conditions).

Table 11, *Cost Analysis Summary*

	Alt 1	Alt 2	Alt 3			Alt4
			3-5 Year Initial Rest	Use Following Rest		
				Costs of AUM's Available For Use	Cost of AUM's Removed From Leases*	
Number of Cows	111	111	111	111	111	111
AUM's	98	98	98	85	18	98
Cost of AUM's	\$1.56**	\$1.56**	\$13.00***	\$1.56**	\$13.00***	\$13.00***
Total AUM Cost	\$152.88	\$152.88	\$1,274.00 to \$6,370.00	\$132.60	\$234.00	\$1,274.00
Change in Labor Costs	\$0.00	128.48	128.48	\$128.48		\$0.00
Total Costs	\$152.88	\$281.36	\$1,402.48 to \$6,498.48	\$495.08		\$1,274.00

* Following periods of rest, the season of use has been shortened from 45 days on Antelope Road to 20 days and from 76 days on Brownsboro to 20 days.

** Cost of AUM's based on the Federal razing Fee for 2006 of \$1.56.

*** Cost of AUM's based on the Average Private Non-Irrigated Grazing Fee Rate in Oregon for 2006 or \$13.00.

4.5.2 Alternative 1 (No Action/ Proposed Action)

No change would occur to the cost values of the allotments, no new projects would be implemented and grazing activities would continue as previously authorized. Please see Table 11, Cost Analysis Comparison.

4.5.3 Alternative 2

Under this alternative, cost values would remain at current levels. There would be an expected increase in maintenance of approximately four hours on the Canal Allotment, where three new wet area exclosures would be installed by the BLM. The increase in maintenance cost to the lessee would be approximately \$128.48 annually.

4.5.4 Alternative 3

Under this alternative, there would be a rest-from-grazing period on each allotment for 3 to 5 years. Following the initial rest period, the Antelope Road Allotment's season- of- use would be shortened from 44 days to 20 days of use. This would reduce AUM's on Antelope Road Allotment from 19 to 9 AUM's. During the initial rest period of 3 to 5 years and alternating rest years that will commence once grazing is reauthorized, the lessee would be unable to graze on public lands and would need to pay for alternative pasture or feed for livestock.

During the rest period (3 to 5 years) years and alternating rest years that will commence once grazing is reauthorized, the Brownsboro, Canal and Yankee Creek allotment lessees would have to pay for alternative pasture or feed for livestock. Following rest, the annually authorized seasons-of-use would be reduced to 45 days for Brownsboro (a reduction of 30 days) and 46 days on Canal and Yankee Creek Reservoir (no change). This would reduce Brownsboro from 7 to 4 AUMs, while Canal and Yankee Creek Reservoir remain unchanged at 57 and 15 AUMs respectively.

4.5.5 Alternative 4 (No Grazing)

Under this alternative, lessees would lose public lands grazing opportunities after the 2007 grazing season (43 CFR 4110.3-3). How lessees choose to cope with the loss of AUM's varies widely based on individual need and opportunity. Table 11, describes AUM reductions and compares costs based on the 2006 federal grazing fee and the 2006 Average Private Non-Irrigated Grazing Fee Rate in Oregon.

5. *Consultation with Others*

Letters were sent to approx. 35 adjacent land owners within a quarter mile of each allotment announcing the proposed action, to renew grazing leases. Letters were also mailed to interested organizations, community groups, other agencies and tribes. A field trip was held with allotment lessees to gather and share information as required by part 4130.2 (b) of the BLM grazing regulations, "...before issuing or renewing grazing permits or leases." A description of the activities expected and maps were included in the mailing, along with a request for public input regarding BLM's proposed management activities.

BLM also requested that anyone who wanted to continue to be kept informed of project activities return the "Interest Response Form" provided. Organized groups and individuals who in the past had asked to be informed of all BLM land management activities were also included in this first mailing.

A copy of this EA is available upon request from the Ashland Resource Area, Bureau of Land Management, 3040 Biddle Rd., Medford, OR 97540, or by contacting Steve Slavik at (541) 618-2471.

This EA was distributed to the following agencies, organizations, and tribes:

American Forest Resource Council
Association of O&C Counties
Audubon Society
Bureau of Reclamation, Lower Columbia Area Office
Cascadia Wildlands Project
Cow Creek Band of Umpqua Tribe of Indians
Cow Creek Bank of Umpqua Tribe of Indians – Director of Natural Resources
Confederated Tribes of Grand Ronde Community of Oregon
Confederated Tribes of Siletz Indians of Oregon
Confederated Bands [Shasta], Shasta Upper Klamath Indians
Confederated Tribes of the Rogue-table Rock and Associated Tribes
Douglas Timber Operators
Headwaters
Jackson County Commissioners
Jackson Co. Soil and Water Conservation District
Jackson Co. Stockman's Association
Klamath Siskiyou Wildlands Center
Klamath Tribe
League of Wilderness Defenders/Friends of the Rogue-Kalmiopsis
Northwest Environmental Defense Center
Oregon Department of Environmental Quality – Medford
Oregon Department of Environmental Quality - Portland
Oregon Department Forestry
Oregon Natural Resources Council

Oregon Natural Resources Council (Southern Oregon Field Office)
Oregon Natural Resources Council (Western Field Office)
Pacific Legal Foundation
Permittees/Lessees Currently Authorized to Graze on these Allotments
Rogue River – Siskiyou National Forest
Southern Oregon University
Quartz Valley Indian Reservation (Shasta Tribe)
Shasta Nation
Siskiyou Project - Applegate
Siskiyou Project – Cave Junction
Siskiyou Project – Jacksonville
Southern Oregon Timber Industries Association
Umpqua Watersheds, Inc.
The Wilderness Society

6. List of Preparers

The following individuals participated in the formulation and analysis of the alternatives and subsequent preparation of this Environmental Assessment.

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